SoundEarth Strategies

SoundEarth Strategies California, Inc.
3100 Airway Avenue, Suite 114
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Final Revised Summer 2011 Indoor Air Sample Results
JCI Jones Chemicals, Inc.
1401 West Del Amo Boulevard, Torrance, California

October 8, 2013

SoundEarth Strategies California, Inc.
3100 Airway Avenue, Suite 114
Costa Mesa, California 92626

October 8, 2013

Ms. Yarissa Martinez
Remedial Project Manager
Superfund Division
U.S. Environmental Protection Agency, Region 9 (SFD-8)
75 Hawthorne Street
San Francisco, California 94105

SUBJECT: FINAL REVISED SUMMER 2011 INDOOR AIR SAMPLE RESULTS
JCI Jones Chemicals, Inc.
1401 West Del Amo Boulevard, Torrance, California
Project Number: S114-001

Dear Ms. Martinez:

On behalf of JCI Jones Chemicals, Inc. (JCI), SoundEarth Strategies California, Inc. (SoundEarth) prepared this revised letter report presenting the first round of indoor air sampling results for the summer 2011 sampling event at the JCI facility in Torrance, California (the Site; Figure 1). This report incorporates U.S. Environmental Protection Agency (USEPA) comments on the draft report submitted by ARCADIS U.S. Inc. (ARCADIS) on December 6, 2011, and the revised draft report submitted by ARCADIS on April 17, 2013. On September 22 through September 23, 2011, indoor air samples were collected at the Site as outlined in the USEPA-approved Vapor Intrusion Work Plan (the Work Plan) dated July 30, 2011.

The Work Plan provided a scope of work for collecting indoor air samples at selected site locations and is an addendum to the Indoor Air Field Sampling Plan included as Section 3.5 of the Remedial Investigation Work Plan (RIW) for the Site (LFR 2010). The Work Plan incorporates the procedures and protocols described in the RIW, including quality assurance/quality control (QA/QC) procedures. The RIW was prepared in accordance with the September 2008 Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study, Comprehensive Environmental Response, Compensation and Liability Act entered into by JCI and USEPA Region IX. USEPA approved the RIW in a letter dated February 18, 2010 (USEPA 2010).

BACKGROUND

The JCI facility occupies approximately 5.5 acres in an unincorporated area of Los Angeles County (Figure 2). The entire Site has been paved, with the exception of some areas located south of the railroad tracks on the southern end of the property. JCI's Main Office and Warehouse are located on the western side of the property. Manufacturing, distribution, and repackaging of chemicals occur on the southern end of the property near the railroad spur. The Valve Reconditioning Shop and storage areas are located on the northern end of the Site. A containment channel stretches along the southern side of the railroad tracks to direct stormwater runoff away from the facility. A 6-foot-high chain-link fence topped with barbed wire encloses the Site. All gates are locked and a security system is activated during

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TRANSMITTAL

To: Ms. Yarissa Martinez
U.S. Environmental Protection Agency, REtion 9 (SFC-8)
75 Hawthorne Street
San Francisco, California 94105

Date: October 15, 2013
Project No.: S114-001

Subject: Final Revised Indoor Air Sample Results

We Are Sending:

Quantity:	Description:
2	*Final Revised Summer 2011 Indoor Air Sample Results*, dated October 8, 2011, and 1 CD
2	*Final Revised Winter 2012 Indoor Air Sample Results*, dated October 9, 2011, and 1 CD

For Your:		Sent By:	
X	Use		1st Class Mail
	Approval	X	FedEx Ground
	Review/Comments		FedEx Overnight
	Information		Courier
	Other		Other

Comments:
SoundEarth appreciates the opportunity to work with you on this project. Please contact [fill-in] at (206) 306-1900 if you have any questions or require additional information.

Regards,

Silvia Henderson for

Derra Moyers
Technical Editor

SoundEarth Strategies California, Inc.

cc: Tim Gaffney, JCI (electronic copy)
Tim Ross, JCI (electronic copy)

non-operational hours. In addition, access to the Site is controlled by a security guard 24 hours a day, 7 days a week.

The JCI facility currently manufactures two products, sodium hypochlorite (Sunny Sol "150") and sodium bisulfite. The facility also repackages chlorine, sulfur dioxide, and sodium hydroxide for distribution.

The Site is bordered to the north and east by the Montrose Superfund Site. The Frito-Lay Corporation distribution facility is located west of the Site. The Los Angeles Department of Water and Power right-of-way is located directly south of the Site, followed by the Farmer Brothers Coffee Company facility.

Properties in the immediate site vicinity consist of a mixture of residences and industrial complexes. Areas to the west and east of the Site are zoned for industrial use, and are currently occupied by oil refineries and manufacturing facilities. Land up to 1 mile north of the Site (where the San Diego Freeway is located) is zoned for heavy industrial use, while land north of the freeway is zoned for residential use. The area south of the Site is zoned for a mixture of industrial and residential uses, with commercial use primarily limited to the major streets.

SITE HISTORY AND CHEMICAL USAGE

Chemicals known to be currently or to have been previously stored or handled at the Site are identified in the RIW. The Site history and chemical usage are briefly summarized below.

In 1943, Stauffer Chemical Company (Stauffer) purchased 18 acres of land along Normandie Avenue in Los Angeles (near Torrance, California), which included what are now the Montrose Superfund Site and the JCI Site. This property had previously been used for a paint plant and a sulfuric acid plant. The sulfuric acid plant reportedly used the Manheim furnace process, which burns or roasts raw sulfide ore material to produce sulfuric acid. From 1943 until 1952, Stauffer continued to operate the sulfuric acid plant on what is currently the JCI Site, but may have switched to producing sulfuric acid by burning sulfur, which would have generated limited ash.

From 1947 to 1982, Montrose Chemical Corporation of California (Montrose) operated a dichlorodiphenyltrichloroethane (DDT) manufacturing plant on 13 acres of land leased from Stauffer. JCI leased the remaining 5 acres of the Stauffer property from at least 1963 until 1968, when JCI purchased the land from Stauffer. Before 1963, Stauffer manufactured sulfuric acid on the property. The sulfuric acid plant was dismantled in the early 1960s.

Water treatment chemicals and other chemicals used by the public and industry have historically been stored, manufactured, repackaged, and distributed at the Site. Historically, the JCI facility manufactured sodium hypochlorite, sodium bisulfite, and ammonium hydroxide, and repackaged chlorine, sulfur dioxide, anhydrous ammonia, sodium hydroxide, potassium hydroxide, hydrochloric acid, acetic acid, nitric acid, hydrofluosilicic acid, phosphoric acid, and various solvents into smaller Department of Transportation-approved containers. The facility has not handled organic chemicals or solvents in more than 20 years. The only chemicals currently handled or manufactured at the Site are sodium hypochlorite, sodium bisulfite, chlorine, sulfur dioxide, and sodium hydroxide.

Chemicals present in office workspaces include small quantities of household cleaning products such as detergent soap (Joy and/or Dove brands) in the Break Room and Swiffer WetJet non-phosphate cleaner, Comet, Simple Green, Spic and Span, Lysol toilet bowel cleaner/hydrogen chloride 9.5 percent, and liquid hand soap in the Storage Room.

CONCEPTUAL SITE MODEL

A preliminary conceptual site model (CSM) presenting exposure pathways and receptors was included in the RIW prepared by LFR in 2010 and updated in the Draft Soil and Soil-Gas Data Report and the Draft DNAPL Reconnaissance Investigation Data Report, which were submitted to the USEPA in August 2010 and January 2011, respectively (ARCADIS 2010 and 2011a). The CSM provides a summary of the relationships between the chemical sources, potentially complete transport pathways, exposure media, potential current and future receptors, and potentially complete and significant exposure pathways at the Site.

SUMMARY OF SOIL-GAS RESULTS

During the soil-gas investigation conducted in May 2010, LFR collected soil-gas samples from 44 locations at depths of 5, 15, and 35 feet below ground surface. The soil-gas samples were analyzed in a mobile laboratory using USEPA Method 8260B with confirmation samples analyzed by Method TO-15 in a stationary laboratory. Seventeen volatile organic compounds (VOCs) were detected at one or more locations. The VOCs detected at the Site and their depths, frequencies, and concentration ranges are presented in the table below and shown on Figures 3 and 4. The results were compared to industrial California Human Health Screening Levels (CHHSLs), where available, as described in ARCADIS' August 2010 Draft Soil and Soil-Gas Data Report (ARCADIS 2010).

Summary of Volatile Organic Compound Results for Soil-Gas Samples

Analyte	Depth (feet bgs)	Detection Frequency	Minimum Detected (µg/L)	Maximum Detected (µg/L)	Number Exceeding CHHSL
1,1,1-Trichloroethane	5	2/44	6.0	6.0	0
	15	1/44	21	21	0
	35	2/44	6.6	14	0
1,1,2-Trichloroethane	5	2/44	40	130	2
	15	0/44	NA	NA	NA
	35	0/44	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	4/44	1.2	25	NA
	15	5/44	20	50	NA
	35	9/44	6.3	76	NA
1,1-Dichloroethane	5	5/44	10	63	5
	15	8/44	9.9	82	8
	35	17/44	11	74	17

Analyte	Depth (feet bgs)	Detection Frequency	Minimum Detected (µg/L)	Maximum Detected (µg/L)	Number Exceeding CHHSL
1,1-Dichloroethene	5	23/44	9.5	130	0
	15	26/44	5.2	150	0
	35	34/44	28	150	0
Benzene	5	1/44	21	21	1
	15	1/44	45	45	1
	35	1/44	190	190	1
Carbon Tetrachloride	5	3/44	17	71	3
	15	6/44	20	290	6
	35	7/44	23	140	7
Chlorobenzene	5	3/44	19	77	0
	15	1/44	21	21	0
	35	1/44	200	200	0
Chloroform	5	21/44	4.5	560	21
	15	29/44	8.6	1,100	29
	35	40/44	15	4,400	40
cis-1,2-Dichloroethene	5	10/44	4.7	87	2
	15	8/44	13	130	4
	35	11/44	17	130	7
Ethylbenzene	5	1/44	36	36	1
	15	1/44	48	48	1
	35	2/44	27	27	2
m,p-Xylenes	5	1/44	30	30	0
	15	0/44	NA	NA	NA
	35	2/44	20	66	0
Tetrachloroethene	5	44/44	42	9,400	44
	15	44/44	74	22,000	44
	35	44/44	200	19,000	44
Toluene	5	0/44	NA	NA	0
	15	0/44	NA	NA	0
	35	2/44	5.4	40	0
trans-1,2-Dichloroethene	5	1/44	1.0	1.0	0
	15	0/44	NA	NA	NA
	35	0/44	NA	NA	NA

Analyte	Depth (feet bgs)	Detection Frequency	Minimum Detected (µg/L)	Maximum Detected (µg/L)	Number Exceeding CHHSL
Trichloroethene	5	38/44	6.6	500	38
	15	35/44	13	690	35
	35	42/44	28	660	42
Vinyl chloride	5	1/44	88	88	1
	15	2/44	20	90	2
	35	5/44	20	120	5

NOTES:

µg/L = micrograms per liter
bgs = below ground surface
CHHSLs = California Human Health Screening Levels
NA = not applicable

OBJECTIVES OF THE INDOOR AIR SAMPLING EVENT

The objective of the indoor air investigation was to assess indoor air quality at site locations where office workers are regularly present. Data collected are used (1) to evaluate whether VOCs in soil or shallow groundwater are migrating through the soil column and into Site buildings, potentially impacting indoor air quality and (2) as inputs to the baseline human health risk assessment (HHRA), as outlined in Section 4 of the RIW. The purpose of this report is to present the results of the first sampling event. ARCADIS will evaluate the data following completion of the second indoor air sampling event.

The specific objectives were included in the Work Plan. The objectives set forth in the Work Plan were satisfied, as discussed below.

Objective 1: To collect data of sufficient quality to assess the VOC concentrations in indoor air inside the Site buildings commonly occupied by office workers.

The analytical results were validated per the specifications of the Site-Specific Quality Assurance Project Plan (QAPP; LFR 2010). Attachment A presents the data validation report. Data were found to be of sufficient quality to quantify VOC concentrations in the indoor air.

Objective 2: To supplement the data collected as part of the pre-sampling building survey, to provide multiple lines of evidence to evaluate the occurrence of vapor intrusion in Site buildings.

The data are of sufficient quality to be used as a line of evidence in the vapor intrusion evaluation. Both indoor and outdoor samples were collected for comparison purposes. The results were used to evaluate the potential influence of both ambient air and vapor intrusion on indoor air quality.

Objective 3: To collect data of sufficient quality to be used in the evaluation of human health risk from indoor air.

Based on the data validation results, the data are of sufficient quality to be used in the HHRA. ARCADIS will perform the HHRA after the second round of indoor air data are collected.

PRE-SAMPLING BUILDING SURVEY RESULTS

In accordance with the RIW, ARCADIS conducted a pre-sampling survey of Site buildings with significant occupancy by office workers. On January 13, 2011, representatives of the USEPA and ARCADIS conducted a Site visit to further evaluate the results of the building survey and identify reasonable locations for indoor air sampling. During a walkthrough of the Site buildings, representatives of JCI provided available information regarding the construction and occupational history of the buildings, and potential sampling locations were discussed based on the available data. The results of the building survey, including photographs, were presented in the Work Plan and are briefly summarized in the table below. Figures 3 and 4 present detailed maps of the occupied Site buildings.

JCI Pre-Sampling Building Survey

Building ID	Office (Figure 3)	Rear Warehouse Office (Figure 3)	Lunch/Break Room (Figure 4)
Typical number of occupants	5	1 or 2	10
Amount of time occupants spend in the building (hours per day)	8 Hours	Maximum 1 hour	Maximum 1 hour
Number of floors	1	1	1
Indoor air volume (cubic feet)	Main Office–7,559 Printer Room–811 Storage Office–783 Conference Room–1,504 Storage Room–3,655 Private Office 1–1,225 Private Office 2–1,225 Private Office 3–1,225	2,901	Locker Room–2,325 Break Room–3,672 Laboratory–1,245 Meeting Room–2,550
Building's age (date of construction)	1967	2000	1960s
Construction materials	Slab concrete/ metal shell/ wood frame	Slab concrete/ metal shell/ wood frame	Slab concrete/ wood frame/ plaster/ stucco
Historical uses	Office	Dispatching	Lunch/shower/lockers

Building ID	Office (Figure 3)	Rear Warehouse Office (Figure 3)	Lunch/Break Room (Figure 4)
Chemicals stored	Conference Room: Detergent soap (Joy and/or Dove brands) Storage Room: Swiffer WetJet non phosphate cleaner Comet Simple Green Spic and Span Lysol toilet bowel cleaner/ hydrogen chloride 9.5% Softsoap liquid hand soap Purell hand sanitizer Members Mark Hand Cleaner Ajax Antibacterial Spray Cleaner	No reported chemical storage	Buffer solution, pH 7.0, pH 10.0 (500 ml) Sodium hypochlorite samples (250 ml bottles) Distilled water Acetic Acid 9-10% solution (500 ml; 1 gal) Iodine solution In (500 ml; 1 liter) Sodium thiosulfate (250 ml; 4 liter) Phenolthalein indicator (in ethy alcohol solution) (1 liter) Hydrochloric acid 1.0N, 0.25N (250 ml; 4 liter) Sodium bisulfate solution samples (250 ml) Starch indicator, 0.5% with chloroform (500 ml) Potassium iodine (granular) Neutral Liquid Laboratory Detergent (500 ml)
Dates and types of major building modifications	1970s small add-on	2000s added dispatch office	2000s small inner wall removed
Painting/cleaning/pest control schedules	Interior of office painted September 2006, offices cleaned weekly, Break Room cleaned every Friday, dry cleaning stored outside conference room in Warehouse, no pest control, no fuel storage	Exterior of Warehouse painted July 2009, no cleaning, no pest control, no fuel storage	New floor and paint in July 2010, cleaned weekly on Fridays, no pest control, no fuel storage
Does the building have a basement?	No	No	No
Describe the foundation including (1) overall condition; (2) thickness, above and below grade; and (3) the presence of expansion joints.	(1) Good, (2) 4" to 6" with bearing wall areas and 12" footing, (3) none	(1) Good, (2) 4" to 6" with bearing wall areas and 12" footing, (3) none	(1) Good, (2) 4" to 6" with bearing wall areas and 12" footing, (3) none

Building ID	Office (Figure 3)	Rear Warehouse Office (Figure 3)	Lunch/Break Room (Figure 4)
Floor covering in each room of the lowest floor (such as carpet or tile)	Tile in Restroom; Formica tile in Storage Room; the rest is low pile carpet	Tile	Bare concrete with two-part painted epoxy floor covering; Formica tile in Locker Room and Restroom, tile in shower
Were any openings, cracks, or penetrations observed in the foundation?	Crack in floor tile/concrete in Storage Room	None	None
Do any utilities penetrate the foundation? If so, are they sealed properly?	None	None	None
Identify any sumps; list dimensions and typical operating conditions.	None	None	None
Condition of the wall floor junction seal	OK	None	OK
French drains, if any	None	None	Floor drain in Restroom
HVAC system type/model	Forced air/heat	Wall mounted	Forced air/heat

NOTES:
gal = gallon
HVAC = heating, ventilation, and air conditioning
ml = milliliter

SAMPLING LOCATIONS

Based on the results of the pre-sampling building survey, the Site walk, discussions with the USEPA, and the approved Work Plan, ARCADIS collected indoor air samples from locations at the Site, as summarized in the table titled Indoor Air Sampling Locations in this report and as shown on Figures 2, 3, and 4. Six indoor air samples were collected: three from the Main Office area, one from the Warehouse Office, and two from the Break Room. These areas were in buildings that are not currently used for chemical manufacturing or storage and are occupied at least 1 hour per workday. In addition, two ambient air samples and one duplicate air sample were collected for QA/QC evaluation.

The proposed sampling locations were based on discussions with the USEPA during the Site visit on January 13, 2011. The rationale for the sample locations was presented in the USEPA-approved Work Plan (ARCADIS 2011b). All samples were collected concurrently during the same mobilization.

SAMPLING METHODS

Air samples for VOC analysis were collected in 6-liter stainless steel, evacuated Summa canisters designed specifically for collecting indoor and outdoor ambient air samples. Each 6-liter Summa canister was equipped with a flow controller and flow restrictor that use a critical orifice to regulate the flow of

air into the canister. The laboratory evaluated the flow controllers to verify and confirm that air flow for each canister was set at the appropriate rate for the collection of 24-hour samples before a canister was deployed to the field. No flow checks were performed in the field. The canisters were pre-evacuated by the laboratory to approximately -30 inches of mercury (Hg). None of the initial vacuum gauges read less than 26 inches of Hg; therefore, no canisters were replaced before sample collection. Final vacuum gauges were between 0 and -7 inches of Hg. Initial and final vacuum gauges, sample times, and other parameters recorded in the field are summarized in Table A of Attachment B.

In accordance with the Work Plan, each indoor air sample collection device was positioned for sample collection within the breathing zone at approximately 3 to 5 feet above ground surface. The ambient air sample collection device was positioned at a height that is representative of building HVAC air intake conditions. Specific Summa canister sampling procedures are presented in the Work Plan.

Upon collection, all samples were delivered to Columbia Analytical Services, a state-certified analytical laboratory, under routine chain of custody. The samples were analyzed for VOCs using USEPA Method TO-15 for selective ion monitoring (SIM) using low-level reporting limits.

Indoor Air Samples

ARCADIS collected a total of six indoor air samples (AUS-IA-1 through AUS-IA-6) from the Site. Sample locations are summarized in the table titled Indoor Air Sampling Locations in this report and are shown on Figures 2 through 4. In addition, ARCADIS collected a duplicate indoor air sample (AUS-IA-DUP) on the Site (from location AUS-IA-6). Field notes and site photographs are in Attachment C.

Ambient Air Sample

ARCADIS collected two ambient air samples (AUS-IA-AMB-1 and AUS-IA-AMB-2; Figures 2 and 3) over the duration of the sampling event. These sampling locations were chosen to be representative of outdoor air conditions near the fresh air intake of the Main Office Building (AUS-IA-AMB-1) and the Break Room (AUS-IA-AMB-2). The Main Office Building sample was collected above the edge of the canopy covering the main entrance to minimize the effects of building ingress and egress. The Break Room sample was collected near the top of the main entrance doorway. The ambient air samples were collected using the methods described for indoor air samples; ambient air samples will also be collected during the indoor air sampling period.

DOCUMENTATION

Documentation of all field activities (e.g., sampling techniques, environmental and building conditions) was kept in Site-specific Air Sampling Logs (Attachment B). The field sampling team noted the following details for each sample collected:

- Sample identification.
- Date and time of sample collection.
- Identification of each Summa canister.
- Sampling start and stop dates and times.
- Vacuum of canisters before and after sampling.

- Weather conditions.
- Any other pertinent information, such as spills, floor stains, chemicals stored, or odors.

ASSESSMENT OF INDOOR AIR RESULTS

Analytical results from the indoor air sampling event were preliminarily evaluated. First, the data were validated per the specification in the Site-specific QAPP. As part of the evaluation, the following parameters were reviewed: calibration procedures, internal QC checks (including analytical batch and laboratory QC samples), data quality indicators, preventive maintenance, and corrective actions for the analytical method for consistency with the QAPP.

Based on the data validation, the results for chloromethane and chloroform had the analyte positively identified and the associated numerical value was the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the Contract Required Quantitation Limit (CRQL). The exception to this was in AUS-IA-4 and AUS_IA-AMB-1, where chloroform was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL was approximate and may be inaccurate or imprecise. Although the laboratory deviated from specified protocols, the data are still usable for the HHRA.

As requested in USEPA's July 11, 2013 comments on the April 17, 2013 version of this report, data validation in accordance with the QAPP addendum (ARCADIS 2012) was conducted by Laboratory Data Consultants (LDC). LDC reviewed the USEPA comments and provided a complete data validation report, which is included in Attachment A along with the original ARCADIS data validation report. LDC reviewed the relative standard deviation (RSD) values including the RSD value for acetone mentioned in USEPA's July 11, 2013 comments. Acetone was reported from TO-15 full scan and analyzed on instrument MS8, which had a RSD for acetone of 17.95 percent. The RSD of 30.80 percent for acetone was from instrument MS7, which only analyzed for TO-15 SIM and no acetone was reported from TO-15 SIM. Therefore, acetone was not qualified in the report.

Table 1 (attached) presents the analytical results for compounds detected above analytical reporting limits. Refer to Attachment D for the complete laboratory reports. The analytical reporting limits were lower than the applicable screening levels, indicating that the reporting limit data quality objective was met. However, the reporting limit for vinyl chloride, which ranged from 0.13 to 0.16 microgram per cubic meter ($\mu g/m^3$), is above the CHHSL of 0.0311 $\mu g/m^3$. In addition, VOCs were identified in the outdoor ambient samples. The indoor air results were also compared to the outdoor ambient sample results. The compounds detected above analytical reporting limits for the air sample and the closest soil-gas samples are summarized in the table below.

Indoor Air Sampling Locations

Sample ID	Location	Rationale/ Potential Factors	Approximate Distance to nearest Outside Soil-gas Detection (feet) and 5-foot Detections	Detected in Indoor Air
AUS-IA-1	Main Office – Open Area	▪ Main Office area with 2 to 3 full-time workers ▪ Large open room with windows on eastern wall that are occasionally open for ventilation ▪ Typically occupied up to 8 hours per day ▪ No reported indoor chemical use ▪ Office workers are non-smokers who may wear cosmetics and dry-cleaned clothing ▪ Sample to be placed on counter top along western wall at approximate breathing zone area while seated (office workers typically work in seated position)	32 feet from J-SG-81 Detected in 5-foot sample (µg/L): ▪ 1,1-DCE (12) ▪ Chloroform (6) ▪ PCE (93) ▪ TCE (12)	Freon 113, acetone, benzene, carbon tetrachloride, chloroform, chloromethane, Freon 12, ethylbenzene, isopropanol, methylene chloride, xylenes, PCE, TCE, Freon 11
AUS-IA-2	Main Office – Conference Room	▪ Conference/Break Room where office workers may gather for lunch or short periods of time (1 hour or less) ▪ Minor storage of cleaning supplies in cupboard ▪ Dry-cleaned uniforms stored outside door to warehouse ▪ Sample to be placed on conference table at approximate breathing zone while seated	36 feet from J-SG-82 Detected in 5-foot sample (µg/L): ▪ 1,1-DCE (22/17) ▪ Benzene (<10/6.5) ▪ Chlorobenzene (19/23) ▪ Chloroform (<10/8.2) ▪ PCE (120/50) ▪ TCE (26/15)	Freon 113, acetone, benzene, carbon tetrachloride, chloroform, chloromethane, Freon 12, ethylbenzene, isopropanol, MIBK, methylene chloride, xylenes, PCE, TCE, Freon 11
AUS-IA-3	Main Office – Personal Office	▪ Personal office of Tim Ross / General Manager ▪ Central of the three personal offices ▪ Occupied on a regular basis ▪ No chemical storage ▪ Sample to be placed on side credenza in approximate breathing zone while seated	36 feet from J-SG-82 Detected in 5-foot sample (µg/L): ▪ 1,1-DCE (22/17) ▪ Benzene (<10/6.5) ▪ Chlorobenzene (19/23) ▪ Chloroform (<10/8.2) ▪ PCE (120/50) ▪ TCE (26/15)	Freon 113, acetone, benzene, carbon tetrachloride, chloroform, chloromethane, Freon 12, ethylbenzene, isopropanol, methylene chloride, xylenes, PCE, TCE, Freon 11, hexane, tetrahydrofuran, 2,2,4-trimethylpentane

Sample ID	Location	Rationale/ Potential Factors	Approximate Distance to nearest Outside Soil-gas Detection (feet) and 5-foot Detections	Detected in Indoor Air
AUS-IA-4	Warehouse Office	▪ Typically not occupied but may be used intermittently for office activities ▪ Sample to be placed on work desk in breathing zone while seated	18 feet from J-SG-85 Detected in 5-foot sample (µg/L): ▪ 1,1-DCA (48) ▪ 1,1-DCE (120) ▪ Chloroform (110) ▪ Cis-1,2-DCE (66) ▪ PCE (880) ▪ TCE (440) ▪ Vinyl chloride (88)	Freon 113, acetone, benzene, carbon tetrachloride, chloroform, chloromethane, Freon 12, ethylbenzene, isopropanol, methylene chloride, xylenes, PCE, Freon 11
AUS-IA-5	Break Room – Common Area	▪ Break Room; may be occupied by up to 10 employees for periods typically less than 1 hour ▪ Area divided into laboratory, lunch room, locker room, meeting area ▪ Sample to be placed on back (east) counter top of lunch room common area in breathing zone	36 feet from J-SG-92 Detected in 5-foot sample (µg/L): ▪ 1,1,2-trichloro-1,2,2-trifluoromethane (<20/9.2) ▪ 1,1-DCA (<20/2.3) ▪ 1,1-DCE (81/65) ▪ Benzene (<20/2.7) ▪ Chloroform (<20/8.2) ▪ PCE (450/230) ▪ TCE (65/28)	Freon 113, acetone, benzene, carbon tetrachloride, chloromethane, Freon 12, ethylbenzene, methylene chloride, xylenes, PCE, Freon 11
AUS-IA-6	Break Room – Side Room/ Meeting Area	▪ Portion of the Break Room; may also be occupied for periods up to 1 hour a day ▪ Sample to be placed on conference table in breathing zone while seated	18 feet from J-SG-80 Detected in 5-foot sample (µg/L): ▪ PCE (410) ▪ TCE (26)	Freon 113, acetone, benzene, carbon tetrachloride, chloroform, chloromethane, Freon 12, ethylbenzene, isopropanol, methylene chloride, xylenes, PCE, Freon 11, MEK
AUG-IA-AMB-1	Outside Building Air Intake	▪ Outside main entrance to office building; background (ambient) concentration near building air intake	36 feet from J-SG-74 Detected in 5-foot sample (µg/L): ▪ PCE (81) ▪ TCE (16)	Freon 113, acetone, benzene, carbon tetrachloride, chloromethane, Freon 12, ethylbenzene, xylenes, methylene chloride, toluene, Freon 11

Sample ID	Location	Rationale/ Potential Factors	Approximate Distance to nearest Outside Soil-gas Detection (feet) and 5-foot Detections	Detected in Indoor Air
AUG-IA-AMB-2	Outside Building Air Intake	▪ Outside main entrance to break room building; background (ambient) concentration near building air intake	20 feet from J-SG-79 Detected in 5-foot sample (µg/L): ▪ 1,1-DCE (16) ▪ PCE (120) ▪ TCE (96)	Freon 113, acetone, benzene, carbon tetrachloride, chloromethane, Freon 12, ethylbenzene, xylenes, methylene chloride, toluene, Freon 11, chloroform

NOTES:
µg/L = micrograms per liter
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethylene
Cis-1,2-DCE = Cis-1,2-dichloroethylene
MEK = methyl ethyl ketone
MIBK = methyl isobutyl ketone
PCE = tetrachloroethylene
TCE = trichloroethylene

Compounds detected in both the outdoor samples and the indoor air samples, at similar concentrations, are assumed to be from outside influences. The majority of the VOCs detected in the indoor air were also detected in the outdoor air at similar concentrations, which indicates some influence by ambient sources. The exceptions include each of the following compounds with one trace detection above analytical reporting limits: 2,2,4-trimethylpentane, 2-hexanone, methyl isobutyl ketone, n-hexane, and tetrahydrofuran. In addition, tetrachloroethylene (PCE) and trichloroethylene (TCE) were detected at concentrations less than 1 µg/m^3 indoors and not in the outdoor air.

Sample results were compared to corresponding CHSSLs and USEPA Regional Screening Levels (RSLs; USEPA 2012) for industrial air quality criteria in accordance with the RIW. Reporting limits and the risk-based criteria for comparison are shown in Table 1 (attached). Exceedances are discussed below.

- The CHHSL for carbon tetrachloride is 0.097 µg/m^3 and the RSL is 2.0. Carbon tetrachloride was detected in each sample at concentrations above the CHHSL but below the RSL.
- The CHHSL for PCE is 0.69 µg/m^3 and the RSL is 47 µg/m^3. PCE was detected in two indoor samples at concentrations of 0.89 and 0.92, which exceed the CHSSL but are below the RSL.
- The CHHSL for benzene is 0.141 µg/m^3 and the RSL is 1.6 µg/m^3. Benzene was detected in all of the samples at concentrations ranging from 0.35 µg/m^3 to 0.45 µg/m^3, which exceed the CHHSL but are below the RSL.
- The RSL for chloroform is 0.53 µg/m^3. Chloroform was detected in two indoor air samples at estimated values of 0.53 and 0.62 µg/m^3, which exceed the RSL. There is no CHHSL for chloroform.

No other exceedances were identified.

Indoor air conditions can vary depending on climate conditions due to the seasonal use of heating and/or air conditioning. The second round of indoor air samples will be collected in winter 2012 (February 2012). After the second round of air sampling is performed, ARCADIS will evaluate the data to consider whether an immediate worker protection response would be appropriate. Based on the results of the first round of sampling, the worker receptor RSLs were not exceeded, suggesting no need for immediate worker protection measures. The air results meet the data quality objectives and can be used as a line of evidence in the subsequent vapor intrusion evaluation.

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CLOSING

Please contact the undersigned at 714.730.9052 if you have any questions or comments regarding the contents of this letter report.

Respectfully,

SoundEarth Strategies California, Inc.

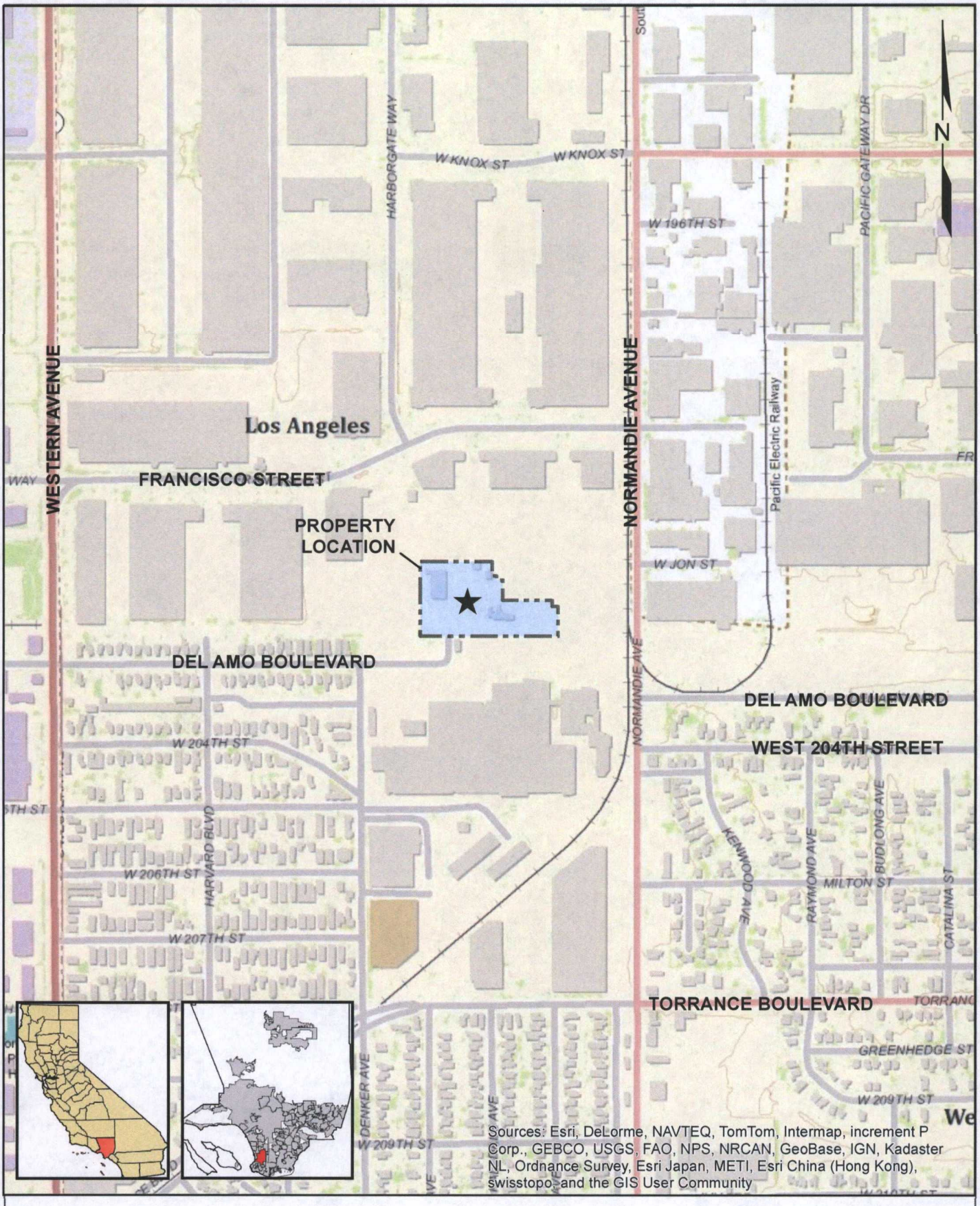
Melissa C. Schuetz, PG
Principal Geologist

Attachments: Figure 1 Vicinity Map
Figure 2, Site Plan Showing Indoor Air Sampling Locations
Figure 3, Office Site Plan Showing Indoor Air Sampling Locations and Results (September 23, 2011)
Figure 4, Break Room Site Plan Showing Indoor Air Sampling Locations and Results (September 23, 2011)
Table 1, Summary of Volatile Organic Compounds Analytical Results
A, Data Validation Report
B, Table A, Soil-Gas Sampling Field Parameters
C, Field Notes and Site Photographs
D, Laboratory Analytical Report
Columbia Analytical Services, P1103662

cc: Tim Gaffney, JCI
Tim Ross, JCI

MCS:mdb/syh

FIGURES



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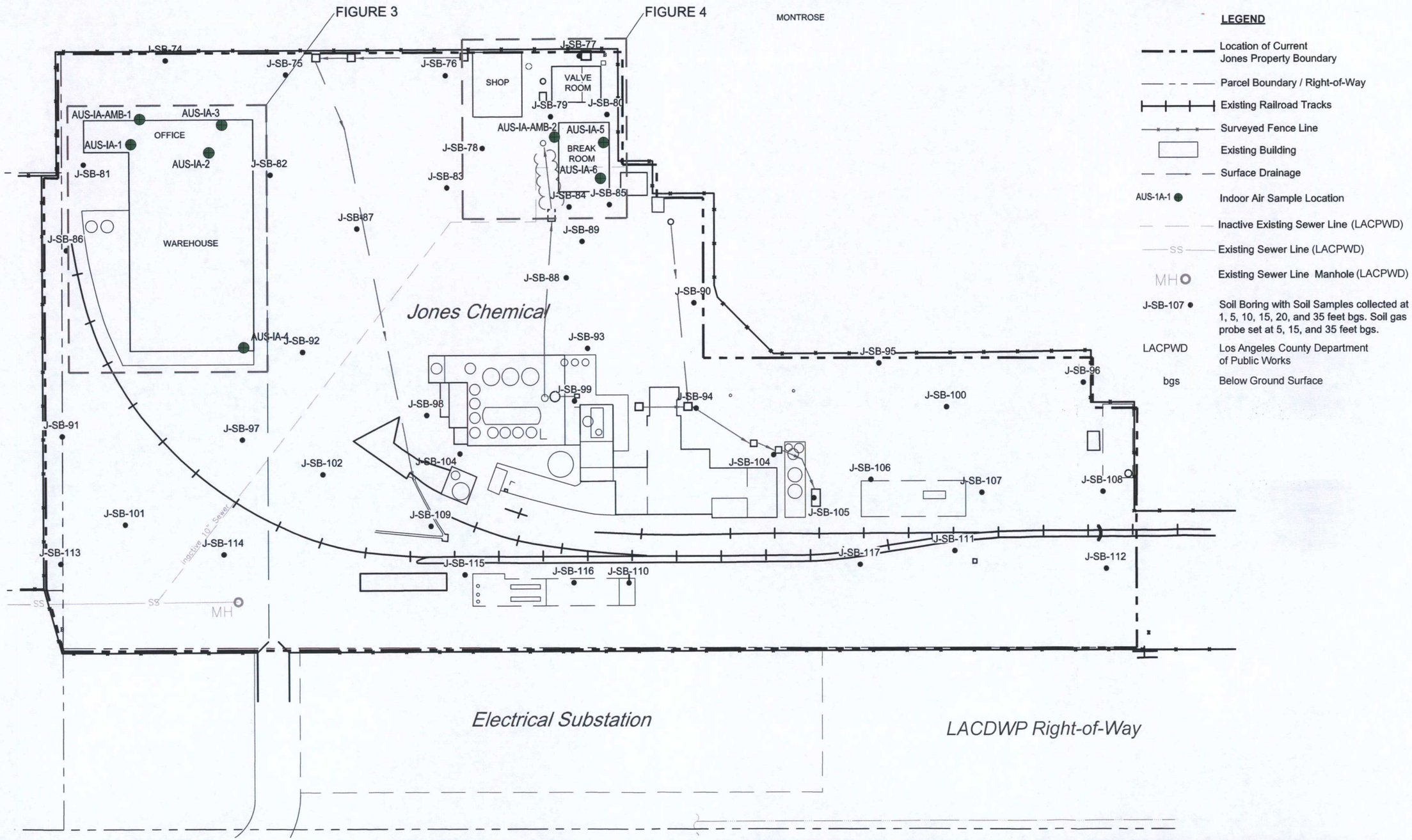
GIS FILE: S114-JCI-FIG1

PROJECT NAME: JCI JONES CHEMICAL INC.
PROJECT NUMBER: S114-001
STREET ADDRESS: 1401 DEL AMO BOULEVARD
CITY, STATE: TORRANCE, CALIFORNIA

FIGURE 1
VICINITY MAP



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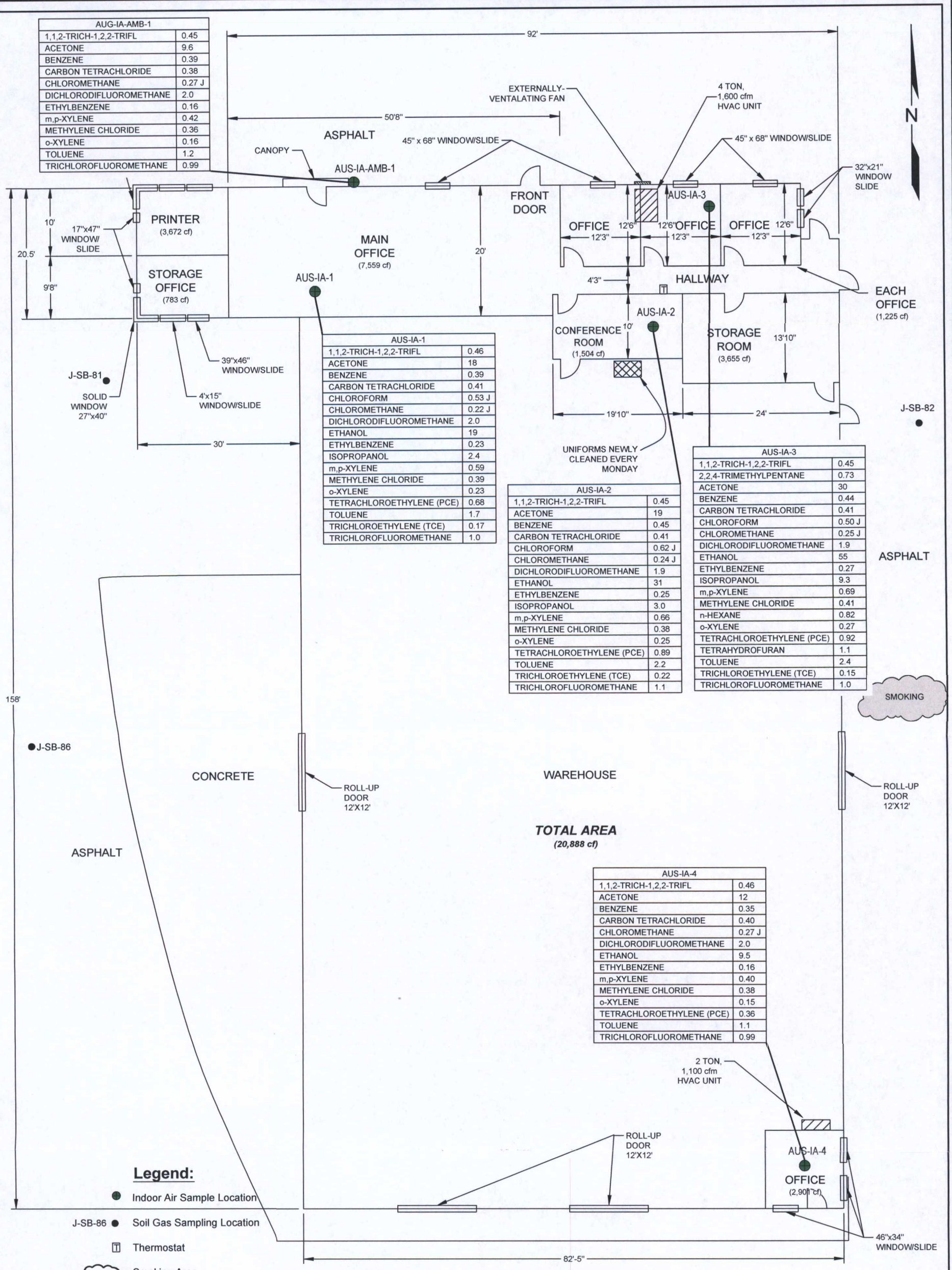
PROJECT NAME: JONES CHEMICAL INC
PROJECT NUMBER: S114
STREET ADDRESS: 1401 DEL AMO BOULEVARD
CITY, STATE: TORRANCE, CALIFORNIA

REGION:

0 65
APPROXIMATE SCALE IN FEET

FIGURE 2
SITE PLAN SHOWING INDOOR AIR SAMPLING LOCATIONS

AUG-IA-AMB-1	
1,1,2-TRICH-1,2,2-TRIFL	0.45
ACETONE	9.6
BENZENE	0.39
CARBON TETRACHLORIDE	0.38
CHLOROMETHANE	0.27 J
DICHLORODIFLUOROMETHANE	2.0
ETHYLBENZENE	0.16
m,p-XYLENE	0.42
METHYLENE CHLORIDE	0.36
o-XYLENE	0.16
TOLUENE	1.2
TRICHLOROFLUOROMETHANE	0.99



AUS-IA-1	
1,1,2-TRICH-1,2,2-TRIFL	0.46
ACETONE	18
BENZENE	0.39
CARBON TETRACHLORIDE	0.41
CHLOROFORM	0.53 J
CHLOROMETHANE	0.22 J
DICHLORODIFLUOROMETHANE	2.0
ETHANOL	19
ETHYLBENZENE	0.23
ISOPROPANOL	2.4
m,p-XYLENE	0.59
METHYLENE CHLORIDE	0.39
o-XYLENE	0.23
TETRACHLOROETHYLENE (PCE)	0.68
TOLUENE	1.7
TRICHLOROETHYLENE (TCE)	0.17
TRICHLOROFLUOROMETHANE	1.0

AUS-IA-2	
1,1,2-TRICH-1,2,2-TRIFL	0.45
ACETONE	19
BENZENE	0.45
CARBON TETRACHLORIDE	0.41
CHLOROFORM	0.62 J
CHLOROMETHANE	0.24 J
DICHLORODIFLUOROMETHANE	1.9
ETHANOL	31
ETHYLBENZENE	0.25
ISOPROPANOL	3.0
m,p-XYLENE	0.66
METHYLENE CHLORIDE	0.38
o-XYLENE	0.25
TETRACHLOROETHYLENE (PCE)	0.89
TOLUENE	2.2
TRICHLOROETHYLENE (TCE)	0.22
TRICHLOROFLUOROMETHANE	1.1

AUS-IA-3	
1,1,2-TRICH-1,2,2-TRIFL	0.45
2,2,4-TRIMETHYLPENTANE	0.73
ACETONE	30
BENZENE	0.44
CARBON TETRACHLORIDE	0.41
CHLOROFORM	0.50 J
CHLOROMETHANE	0.25 J
DICHLORODIFLUOROMETHANE	1.9
ETHANOL	55
ETHYLBENZENE	0.27
ISOPROPANOL	9.3
m,p-XYLENE	0.69
METHYLENE CHLORIDE	0.41
n-HEXANE	0.82
o-XYLENE	0.27
TETRACHLOROETHYLENE (PCE)	0.92
TETRAHYDROFURAN	1.1
TOLUENE	2.4
TRICHLOROETHYLENE (TCE)	0.15
TRICHLOROFLUOROMETHANE	1.0

AUS-IA-4	
1,1,2-TRICH-1,2,2-TRIFL	0.46
ACETONE	12
BENZENE	0.35
CARBON TETRACHLORIDE	0.40
CHLOROMETHANE	0.27 J
DICHLORODIFLUOROMETHANE	2.0
ETHANOL	9.5
ETHYLBENZENE	0.16
m,p-XYLENE	0.40
METHYLENE CHLORIDE	0.38
o-XYLENE	0.15
TETRACHLOROETHYLENE (PCE)	0.36
TOLUENE	1.1
TRICHLOROFLUOROMETHANE	0.99

Legend:

- Indoor Air Sample Location
- J-SB-86 ● Soil Gas Sampling Location
- T Thermostat
- Smoking Area
- cf Cubic Feet
- cfm Cubic Feet per Minute
- J Estimated Value

1,1,2-TRICH-1,2,2-TRIFL = 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

MIK (4-METHYL-2-PENTANONE) = METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)

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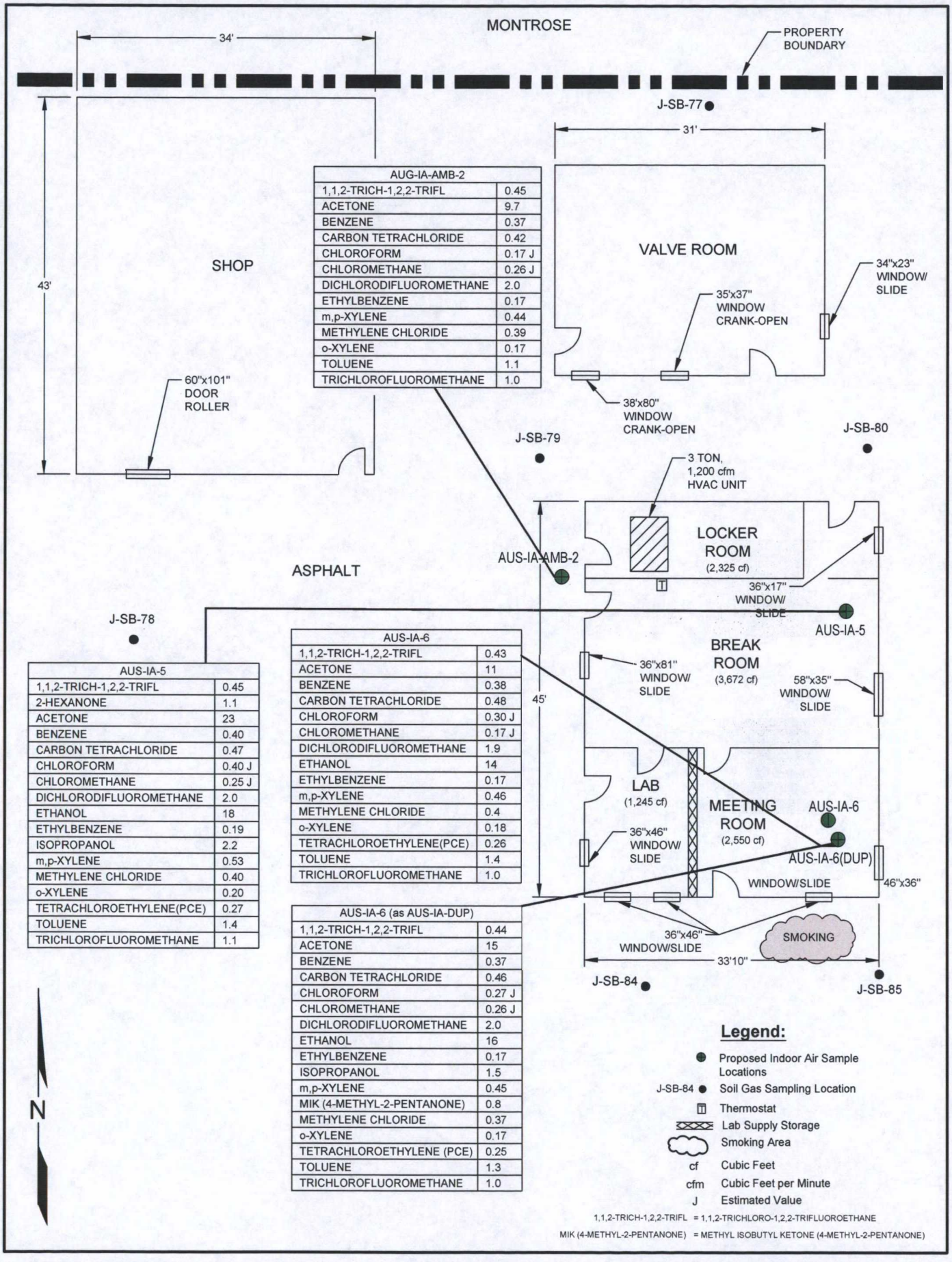
STREET ADDRESS: 1401 DEL AMO BOULEVARD
CITY, STATE: TORRANCE, CALIFORNIA

FIGURE 3
OFFICE SITE PLAN SHOWING INDOOR AIR SAMPLING LOCATIONS AND RESULTS (SEPTEMBER 23, 2011)



AUG-IA-AMB-2	
1,1,2-TRICH-1,2,2-TRIFL	0.45
ACETONE	9.7
BENZENE	0.37
CARBON TETRACHLORIDE	0.42
CHLOROFORM	0.17 J
CHLOROMETHANE	0.26 J
DICHLORODIFLUOROMETHANE	2.0
ETHYLBENZENE	0.17
m,p-XYLENE	0.44
METHYLENE CHLORIDE	0.39
o-XYLENE	0.17
TOLUENE	1.1
TRICHLOROFLUOROMETHANE	1.0

AUS-IA-5	
1,1,2-TRICH-1,2,2-TRIFL	0.45
2-HEXANONE	1.1
ACETONE	23
BENZENE	0.40
CARBON TETRACHLORIDE	0.47
CHLOROFORM	0.40 J
CHLOROMETHANE	0.25 J
DICHLORODIFLUOROMETHANE	2.0
ETHANOL	18
ETHYLBENZENE	0.19
ISOPROPANOL	2.2
m,p-XYLENE	0.53
METHYLENE CHLORIDE	0.40
o-XYLENE	0.20
TETRACHLOROETHYLENE(PCE)	0.27
TOLUENE	1.4
TRICHLOROFLUOROMETHANE	1.1

AUS-IA-6	
1,1,2-TRICH-1,2,2-TRIFL	0.43
ACETONE	11
BENZENE	0.38
CARBON TETRACHLORIDE	0.48
CHLOROFORM	0.30 J
CHLOROMETHANE	0.17 J
DICHLORODIFLUOROMETHANE	1.9
ETHANOL	14
ETHYLBENZENE	0.17
m,p-XYLENE	0.46
METHYLENE CHLORIDE	0.4
o-XYLENE	0.18
TETRACHLOROETHYLENE(PCE)	0.26
TOLUENE	1.4
TRICHLOROFLUOROMETHANE	1.0

AUS-IA-6 (as AUS-IA-DUP)	
1,1,2-TRICH-1,2,2-TRIFL	0.44
ACETONE	15
BENZENE	0.37
CARBON TETRACHLORIDE	0.46
CHLOROFORM	0.27 J
CHLOROMETHANE	0.26 J
DICHLORODIFLUOROMETHANE	2.0
ETHANOL	16
ETHYLBENZENE	0.17
ISOPROPANOL	1.5
m,p-XYLENE	0.45
MIK (4-METHYL-2-PENTANONE)	0.8
METHYLENE CHLORIDE	0.37
o-XYLENE	0.17
TETRACHLOROETHYLENE (PCE)	0.25
TOLUENE	1.3
TRICHLOROFLUOROMETHANE	1.0

Legend:

- Proposed Indoor Air Sample Locations
- J-SB-84 ● Soil Gas Sampling Location
- Thermostat
- Lab Supply Storage
- Smoking Area
- cf Cubic Feet
- cfm Cubic Feet per Minute
- J Estimated Value

1,1,2-TRICH-1,2,2-TRIFL = 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

MIK (4-METHYL-2-PENTANONE) = METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)

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PROJECT NUMBER: S114-001
STREET ADDRESS: 1401 DEL AMO BOULEVARD
CITY, STATE: TORRANCE, CALIFORNIA

FIGURE 4
BREAK ROOM SITE PLAN SHOWING INDOOR AIR SAMPLING LOCATIONS AND RESULTS (SEPTEMBER 23, 2011)

TABLE

SoundEarth Strategies

Table 1
Summary of Volatile Organic Compounds Analytical Results
JCI Jones Chemicals, Inc.
1401 West Del Amo Boulevard
Torrance, California
S114-001

Sample ID	Analyte:	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2,2,4-TRIMETHYLPENTANE	2-HEXANONE	ACETONE	BENZENE	CARBON TETRACHLORIDE	CHLOROFORM	CHLOROMETHANE	DICHLORODIFLUOROMETHANE	ETHANOL	ETHYLBENZENE	ISOPROPANOL	m,p-XYLENE	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE	METHYLENE CHLORIDE	n-HEXANE	o-XYLENE	TETRACHLOROETHYLENE (PCE)	TETRAHYDROFURAN	TOLUENE	TRICHLOROETHYLENE (TCE)	TRICHLOROFLUOROMETHANE
	Method:	TO15SIM	TO15	TO15	TO15	TO15SIM	TO15SIM	TO15SIM	TO15SIM	TO15SIM	TO15	TO15SIM	TO15	TO15SIM	TO15	TO15SIM	TO15	TO15SIM	TO15SIM	TO15	TO15SIM	TO15SIM	TO15SIM
	Units:	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
	Date Sampled																						
AUG-IA-AMB-1	9/23/2011	**0.45**	<0.75	<0.75	**9.6**	**0.39**	**0.38**	<0.15 J	**0.27 J**	**2.0**	<7.5	**0.16**	<1.5	**0.42**	<0.75	**0.36**	<0.75	**0.16**	<0.15	<0.75	**1.2**	<0.15	**0.99**
AUG-IA-AMB-2	9/23/2011	**0.45**	<0.79	<0.79	**9.7**	**0.37**	**0.42**	**0.17 J**	**0.26 J**	**2.0**	<7.9	**0.17**	<1.6	**0.44**	<0.79	**0.39**	<0.79	**0.17**	<0.16	<0.79	**1.1**	<0.16	**1.0**
AUS-IA-1	9/23/2011	**0.46**	<0.81	<0.81	**18**	**0.39**	**0.41**	**0.53 J**	**0.22 J**	**2.0**	**19**	**0.23**	**2.4**	**0.59**	<0.81	**0.39**	<0.81	**0.23**	**0.68**	<0.81	**1.7**	**0.17**	**1.0**
AUS-IA-2	9/23/2011	**0.45**	<0.82	<0.82	**19**	**0.45**	**0.41**	**0.62 J**	**0.24 J**	**1.9**	**31**	**0.25**	**3.0**	**0.66**	<0.82	**0.38**	<0.82	**0.25**	**0.89**	<0.82	**2.2**	**0.22**	**1.1**
AUS-IA-3	9/23/2011	**0.45**	**0.73**	<0.70	**30**	**0.44**	**0.41**	**0.50 J**	**0.25 J**	**1.9**	**55**	**0.27**	**9.3**	**0.69**	<0.70	**0.41**	**0.82**	**0.27**	**0.92**	**1.1**	**2.4**	**0.15**	**1.0**
AUS-IA-4	9/23/2011	**0.46**	<0.65	<0.65	**12**	**0.35**	**0.40**	<0.13 J	**0.27 J**	**2.0**	**9.5**	**0.16**	<1.3	**0.40**	<0.65	**0.38**	<0.65	**0.15**	**0.36**	<0.65	**1.1**	<0.13	**0.99**
AUS-IA-5	9/23/2011	**0.45**	<0.73	**1.1**	**23**	**0.40**	**0.47**	**0.40 J**	**0.25 J**	**2.0**	**18**	**0.19**	**2.2**	**0.53**	<0.73	**0.40**	<0.73	**0.20**	**0.27**	<0.73	**1.4**	<0.15	**1.1**
AUS-IA-6	9/23/2011	**0.43**	<0.77	<0.77	**11**	**0.38**	**0.48**	**0.30 J**	**0.17 J**	**1.9**	**14**	**0.17**	<1.5	**0.46**	<0.77	**0.40**	<0.77	**0.18**	**0.26**	<0.77	**1.4**	<0.15	**1.0**
AUS-IA-6 (as AUS-IA-DUP)	9/23/2011	**0.44**	<0.68	<0.68	**15**	**0.37**	**0.46**	**0.27 J**	**0.26 J**	**2.0**	**16**	**0.17**	**1.5**	**0.45**	**0.80**	**0.37**	<0.68	**0.17**	**0.25**	<0.68	**1.3**	<0.14	**1.0**
California Human Health Screening Levels		NA	NA	NA	NA	1.41 E-01	9.73 E-02	NA	NA	NA	NA	1.6	NA	1.02 E+03	NA	NA	NA	1.02 E+03	6.93 E-01	NA	4.38 +E02	2.04E+00	NA
Regional Screening Level		1.3 E+05	NA	1.3 E+02	1.4 E+05	1.6 E+00	2.0 E+00	5.3 E-01	3.9 E+02	4.4 E+02	NA	4.9 E+00	3.1 E+04	4.4 E+02	1.3 E+04	1.22E+03	3.1 E+03	4.4 E+02	4.7 E+01	NA	2.2 E+04	3.0 E+00	3.1 E+03

NOTES:
Analyses performed by Columbia Analytical Services of Semi Valley, California.
BOLD denotes sample results above method reporting limit.
Result at or above CHHSL.
Result at or above RSL.
Volatile organic compounds are shown for detected compounds only. See laboratory report(s) for a complete list of compounds analyzed.
< = not detected above laboratory reporting limit indicated.
µg/m³ = micrograms per cubic meter
CHHSL = California Human Health Screening Levels for Indoor Air and Soil Gas
J =estimated value
NA = not applicable
RSL = Regional Screening Level

ATTACHMENT A
DATA VALIDATION REPORT

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Jones Chemical

Collection Date: September 23, 2011

LDC Report Date: September 20, 2013

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III & IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): P1103662

Sample Identification

AUS-IA-1
AUS-IA-2
AUS-IA-3
AUS-IA-4
AUS-IA-5**
AUS-IA-6
AUG-IA-AMB-1
AUG-IA-AMB-2
AUS-IA-DUP

**Indicates sample underwent EPA Level IV review

Introduction

This data review covers 9 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method TO-15 for Volatiles.

This review follows the Revised Quality Assurance Project Plan for the Jones Chemical Site, Torrance, California (November 2012) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The canisters were properly pressurized and handled.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 24 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

V. Blanks

Method blank analyses were performed at the required frequency. No volatile contaminants were found in the method blanks.

Canister blank analyses were performed for every sample canister. No volatile contaminants were found in the canister blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Although surrogates were not required by the method, surrogate analysis was performed by the laboratory. Surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were analyzed at the required frequency. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

XII. Compound Quantitation

All compound quantitations were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples AUS-IA-6 and AUS-IA-DUP were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)	Flag	A or P
	AUS-IA-6	AUS-IA-DUP				
Ethanol	14	16	-	2 (≤15.4)	-	-

Compound	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)	Flag	A or P
	AUS-IA-6	AUS-IA-DUP				
Acetone	11	15	-	4 (≤15.4)	-	-
Isopropyl alcohol	1.5U	1.5	-	0 (≤3.0)	-	-
4-Methyl-2-pentanone	0.77U	0.80	-	0.03 (≤1.54)	-	-

Jones Chemical
Volatiles - Data Qualification Summary - SDG P1103662

No Sample Data Qualified in this SDG

Jones Chemical
Volatiles - Laboratory Blank Data Qualification Summary - SDG P1103662

No Sample Data Qualified in this SDG

Jones Chemical
Volatiles - Field Blank Data Qualification Summary - SDG P1103662

No Sample Data Qualified in this SDG

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-1
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00812

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.81	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.32	ND	0.15	
64-17-5	Ethanol	**19**	8.1	**9.9**	4.3	
67-64-1	Acetone	**18**	8.1	**7.4**	3.4	
67-63-0	2-Propanol (Isopropyl Alcohol)	**2.4**	1.6	**0.98**	0.66	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.16	ND	0.051	
75-15-0	Carbon Disulfide	ND	8.1	ND	2.6	
108-05-4	Vinyl Acetate	ND	8.1	ND	2.3	
78-93-3	2-Butanone (MEK)	ND	8.1	ND	2.7	
110-54-3	n-Hexane	ND	0.81	ND	0.23	
109-99-9	Tetrahydrofuran (THF)	ND	0.81	ND	0.27	
110-82-7	Cyclohexane	ND	1.6	ND	0.47	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.81	ND	0.17	
142-82-5	n-Heptane	ND	0.81	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.81	ND	0.20	
591-78-6	2-Hexanone	ND	0.81	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.16	ND	0.019	
75-25-2	Bromoform	ND	0.81	ND	0.078	
100-42-5	Styrene	ND	0.81	ND	0.19	
98-82-8	Cumene	ND	0.81	ND	0.16	
103-65-1	n-Propylbenzene	ND	0.81	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.81	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.81	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.81	ND	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-2**
Client Project ID: **Jones Chemical Torrance / CM010270**

CAS Project ID: P1103662
CAS Sample ID: P1103662-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01555

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.56 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.82	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.33	ND	0.15	
64-17-5	Ethanol	**31**	8.2	**16**	4.4	
67-64-1	Acetone	**19**	8.2	**8.0**	3.5	
[illegible]7-63-0	2-Propanol (Isopropyl Alcohol)	**3.0**	1.6	**1.2**	0.67	
[illegible]7-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.16	ND	0.052	
[illegible]5-15-0	Carbon Disulfide	ND	8.2	ND	2.6	
108-05-4	Vinyl Acetate	ND	8.2	ND	2.3	
78-93-3	2-Butanone (MEK)	ND	8.2	ND	2.8	
110-54-3	n-Hexane	ND	0.82	ND	0.23	
109-99-9	Tetrahydrofuran (THF)	ND	0.82	ND	0.28	
110-82-7	Cyclohexane	ND	1.6	ND	0.48	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.82	ND	0.18	
142-82-5	n-Heptane	ND	0.82	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.82	ND	0.20	
591-78-6	2-Hexanone	ND	0.82	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.16	ND	0.019	
75-25-2	Bromoform	ND	0.82	ND	0.079	
100-42-5	Styrene	ND	0.82	ND	0.19	
98-82-8	Cumene	ND	0.82	ND	0.17	
103-65-1	n-Propylbenzene	ND	0.82	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.82	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.82	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.82	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-3
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01373

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.63 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.70	ND	0.099	
106-99-0	1,3-Butadiene	ND	0.28	ND	0.13	
64-17-5	Ethanol	**55**	7.0	**29**	3.7	
67-64-1	Acetone	**30**	7.0	**13**	2.9	
67-63-0	2-Propanol (Isopropyl Alcohol)	**9.3**	1.4	**3.8**	0.57	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.14	ND	0.044	
75-15-0	Carbon Disulfide	ND	7.0	ND	2.2	
108-05-4	Vinyl Acetate	ND	7.0	ND	2.0	
78-93-3	2-Butanone (MEK)	ND	7.0	ND	2.4	
110-54-3	n-Hexane	**0.82**	0.70	**0.23**	0.20	
109-99-9	Tetrahydrofuran (THF)	**1.1**	0.70	**0.38**	0.24	
110-82-7	Cyclohexane	ND	1.4	ND	0.40	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	**0.73**	0.70	**0.16**	0.15	
142-82-5	n-Heptane	ND	0.70	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.70	ND	0.17	
591-78-6	2-Hexanone	ND	0.70	ND	0.17	
124-48-1	Dibromochloromethane	ND	0.14	ND	0.016	
75-25-2	Bromoform	ND	0.70	ND	0.067	
100-42-5	Styrene	ND	0.70	ND	0.16	
98-82-8	Cumene	ND	0.70	ND	0.14	
103-65-1	n-Propylbenzene	ND	0.70	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.70	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.70	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.70	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-4
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01206

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.66 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.65	ND	0.093	
106-99-0	1,3-Butadiene	ND	0.26	ND	0.12	
64-17-5	Ethanol	**9.5**	6.5	**5.0**	3.5	
67-64-1	Acetone	**12**	6.5	**5.0**	2.7	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.3	ND	0.53	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.13	ND	0.042	
75-15-0	Carbon Disulfide	ND	6.5	ND	2.1	
108-05-4	Vinyl Acetate	ND	6.5	ND	1.8	
78-93-3	2-Butanone (MEK)	ND	6.5	ND	2.2	
110-54-3	n-Hexane	ND	0.65	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	ND	0.65	ND	0.22	
110-82-7	Cyclohexane	ND	1.3	ND	0.38	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.65	ND	0.14	
142-82-5	n-Heptane	ND	0.65	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.65	ND	0.16	
591-78-6	2-Hexanone	ND	0.65	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.13	ND	0.015	
75-25-2	Bromoform	ND	0.65	ND	0.063	
100-42-5	Styrene	ND	0.65	ND	0.15	
98-82-8	Cumene	ND	0.65	ND	0.13	
103-65-1	n-Propylbenzene	ND	0.65	ND	0.13	
622-96-8	4-Ethyltoluene	ND	0.65	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.65	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	ND	0.65	ND	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-5** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-005

Test Code: EPA TO-15 Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 9/23/11
Analyst: Elsa Moctezuma Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00640

Initial Pressure (psig): -1.93 Final Pressure (psig): 3.83

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.73	ND	0.10	
106-99-0	1,3-Butadiene	ND	0.29	ND	0.13	
64-17-5	Ethanol	**18**	7.3	**9.8**	3.8	
67-64-1	Acetone	**23**	7.3	**9.5**	3.1	
67-63-0	2-Propanol (Isopropyl Alcohol)	**2.2**	1.5	**0.88**	0.59	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.15	ND	0.046	
75-15-0	Carbon Disulfide	ND	7.3	ND	2.3	
108-05-4	Vinyl Acetate	ND	7.3	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	7.3	ND	2.5	
110-54-3	n-Hexane	ND	0.73	ND	0.21	
109-99-9	Tetrahydrofuran (THF)	ND	0.73	ND	0.25	
110-82-7	Cyclohexane	ND	1.5	ND	0.42	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.73	ND	0.16	
142-82-5	n-Heptane	ND	0.73	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.73	ND	0.18	
591-78-6	2-Hexanone	**1.1**	0.73	**0.28**	0.18	
124-48-1	Dibromochloromethane	ND	0.15	ND	0.017	
75-25-2	Bromoform	ND	0.73	ND	0.070	
100-42-5	Styrene	ND	0.73	ND	0.17	
98-82-8	Cumene	ND	0.73	ND	0.15	
103-65-1	n-Propylbenzene	ND	0.73	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.73	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.73	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.73	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-6
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01601

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.78 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.77	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.31	ND	0.14	
64-17-5	Ethanol	**14**	7.7	**7.4**	4.1	
67-64-1	Acetone	**11**	7.7	**4.5**	3.2	
<7-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.5	ND	0.63	
7-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.15	ND	0.049	
/5-15-0	Carbon Disulfide	ND	7.7	ND	2.5	
108-05-4	Vinyl Acetate	ND	7.7	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.7	ND	2.6	
110-54-3	n-Hexane	ND	0.77	ND	0.22	
109-99-9	Tetrahydrofuran (THF)	ND	0.77	ND	0.26	
110-82-7	Cyclohexane	ND	1.5	ND	0.45	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.77	ND	0.16	
142-82-5	n-Heptane	ND	0.77	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.77	ND	0.19	
591-78-6	2-Hexanone	ND	0.77	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.15	ND	0.018	
75-25-2	Bromoform	ND	0.77	ND	0.075	
100-42-5	Styrene	ND	0.77	ND	0.18	
98-82-8	Cumene	ND	0.77	ND	0.16	
103-65-1	n-Propylbenzene	ND	0.77	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.77	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.77	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.77	ND	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUG-IA-AMB-1**
Client Project ID: **Jones Chemical Torrance / CM010270**

CAS Project ID: P1103662
CAS Sample ID: P1103662-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00468

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/7/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.56 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.75	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.30	ND	0.14	
64-17-5	Ethanol	ND	7.5	ND	4.0	
67-64-1	Acetone	**9.6**	7.5	**4.0**	3.2	
<7-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.5	ND	0.61	
7-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.15	ND	0.048	
/5-15-0	Carbon Disulfide	ND	7.5	ND	2.4	
108-05-4	Vinyl Acetate	ND	7.5	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	7.5	ND	2.5	
110-54-3	n-Hexane	ND	0.75	ND	0.21	
109-99-9	Tetrahydrofuran (THF)	ND	0.75	ND	0.25	
110-82-7	Cyclohexane	ND	1.5	ND	0.44	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.75	ND	0.16	
142-82-5	n-Heptane	ND	0.75	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.75	ND	0.18	
591-78-6	2-Hexanone	ND	0.75	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.15	ND	0.018	
75-25-2	Bromoform	ND	0.75	ND	0.073	
100-42-5	Styrene	ND	0.75	ND	0.18	
98-82-8	Cumene	ND	0.75	ND	0.15	
103-65-1	n-Propylbenzene	ND	0.75	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.75	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.75	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.75	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 10/19/13

RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUG-IA-AMB-2**
Client Project ID: **Jones Chemical Torrance / CM010270**

CAS Project ID: P1103662
CAS Sample ID: P1103662-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00603

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/7/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.15 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.79	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.32	ND	0.14	
64-17-5	Ethanol	ND	7.9	ND	4.2	
67-64-1	Acetone	**9.7**	7.9	**4.1**	3.3	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.6	ND	0.64	
7-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.16	ND	0.050	
75-15-0	Carbon Disulfide	ND	7.9	ND	2.5	
108-05-4	Vinyl Acetate	ND	7.9	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.9	ND	2.7	
110-54-3	n-Hexane	ND	0.79	ND	0.22	
109-99-9	Tetrahydrofuran (THF)	ND	0.79	ND	0.27	
110-82-7	Cyclohexane	ND	1.6	ND	0.46	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.79	ND	0.17	
142-82-5	n-Heptane	ND	0.79	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.79	ND	0.19	
591-78-6	2-Hexanone	ND	0.79	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.16	ND	0.019	
75-25-2	Bromoform	ND	0.79	ND	0.076	
100-42-5	Styrene	ND	0.79	ND	0.19	
98-82-8	Cumene	ND	0.79	ND	0.16	
103-65-1	n-Propylbenzene	ND	0.79	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.79	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.79	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.79	ND	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-DUP** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-009

Test Code: EPA TO-15 Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 9/23/11
Analyst: Elsa Moctezuma Date Analyzed: 10/7/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00710

Initial Pressure (psig): -1.27 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.68	ND	0.097	
106-99-0	1,3-Butadiene	ND	0.27	ND	0.12	
64-17-5	Ethanol	**16**	6.8	**8.4**	3.6	
67-64-1	Acetone	**15**	6.8	**6.1**	2.9	
67-63-0	2-Propanol (Isopropyl Alcohol)	**1.5**	1.4	**0.62**	0.55	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.14	ND	0.043	
75-15-0	Carbon Disulfide	ND	6.8	ND	2.2	
108-05-4	Vinyl Acetate	ND	6.8	ND	1.9	
78-93-3	2-Butanone (MEK)	ND	6.8	ND	2.3	
110-54-3	n-Hexane	ND	0.68	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.68	ND	0.23	
110-82-7	Cyclohexane	ND	1.4	ND	0.40	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.68	ND	0.15	
142-82-5	n-Heptane	ND	0.68	ND	0.17	
108-10-1	4-Methyl-2-pentanone	**0.80**	0.68	**0.19**	0.17	
591-78-6	2-Hexanone	ND	0.68	ND	0.17	
124-48-1	Dibromochloromethane	ND	0.14	ND	0.016	
75-25-2	Bromoform	ND	0.68	ND	0.066	
100-42-5	Styrene	ND	0.68	ND	0.16	
98-82-8	Cumene	ND	0.68	ND	0.14	
103-65-1	n-Propylbenzene	ND	0.68	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.68	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.68	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.68	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

LDC #: 30264A48a
SDG #: P1103662
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
Level III/IV

Date: 9/03/13
Page: 1 of 1
Reviewer: JW
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/23/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 30%
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 30%
V.	Blanks	A	
VI.	Surrogate spikes	NA	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for Level III validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 6, 9
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Air

1	AUS-IA1	11		21		31	
2	AUS-IA-2	12		22		32	
3	AUS-IA-3	13		23		33	
4	AUS-IA-4	14		24		34	
5	AUS-IA-5**	15		25		35	
6	AUS-IA-6 D	16		26		36	
7	AUG-IA-AMB-1	17		27		37	
8	AUG-IA-AMB-2	18		28		38	
	AUS-IA-DUP D	19		29		39	
10		20		30		40	

LDC #: 30264 A48b

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: V

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Canister pressure criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓	W		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	W	W		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within +/- 30.0 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroeth
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether

LDC#:30264A48a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG
2nd Reviewer:

METHOD: GC MS Volatiles (EPA Method TO-15)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/m3)		RPD (≤50%)	Difference (ug/m3)	Limits (ug/m3)	Qualifications (Parent Only)
	6	9				
WWW	14	16		2	(≤15.4)	
F	11	15		4	(≤15.4)	
DDDD	1.5U	1.5		0	(≤3.0)	
Y	0.77U	0.80		0.03	(≤1.54)	

V:\FIELD DUPLICATES\30264A48a.wpd

LDC #: 30264A48a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compour below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of as

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentra

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (5 ug/m3)	Recalculated RRF (5 ug/m3)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)
1	ICAL MS08	9/7/2011	Ethanol (IS1)	1.237	1.237	1.157	1.157
			Cyclohexane (IS2)	0.553	0.553	0.510	0.510
			1,3,5-TMB (IS3)	2.712	2.712	2.540	2.540

LDC # 30264A48a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS VOA (EPA Method TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Conce
Ais = Area
Cis = Conc

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Report % D
1	10061101 MS08	10/06/11	Ethanol	(IS1)	1.157	1.081	1.081	6.6
			Cyclohexane	(IS2)	0.510	0.488	0.488	4.3
			1,3,5-TMB	(IS3)	2.540	2.475	2.475	2.6

LDC #: 36264A48a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd reviewer: ✓

METHOD: GC/MS VOA (EPA Method TO-15)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 5 , Ethanol

Conc. = $\frac{(168268)(25)(1.45)}{(286771)(1.157)(\quad)(\quad)}$

= 18.38 ug/m3

ppbv = $\frac{(18.38)(24.45)}{(46.07)}$ = 9.76

≈ 9-8 ppbv

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Jones Chemical

Collection Date: September 23, 2011

LDC Report Date: September 20, 2013

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III & IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): P1103662

Sample Identification

AUS-IA-1
AUS-IA-2
AUS-IA-3
AUS-IA-4
AUS-IA-5**
AUS-IA-6
AUG-IA-AMB-1
AUG-IA-AMB-2
AUS-IA-DUP

**Indicates sample underwent EPA Level IV review

Introduction

This data review covers 9 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method TO-15 using Selected Ion Monitoring (SIM) for Volatiles.

This review follows the Revised Quality Assurance Project Plan for the Jones Chemical Site, Torrance, California (November 2012) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The canisters were properly pressurized and handled.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 24 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
7/21/11	Chloromethane	32.97	All samples in SDG P1103662	J (all detects) UJ (all non-detects)	P
	Chloroform	34.76		J (all detects) UJ (all non-detects)	

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

V. Blanks

Method blank analyses were performed at the required frequency. No volatile contaminants were found in the method blanks.

Canister blank analyses were performed for every sample canister. No volatile contaminants were found in the canister blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Although surrogates were not required by the method, surrogate analysis was performed by the laboratory. Surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were analyzed at the required frequency. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

XII. Compound Quantitation

All compound quantitations were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples AUS-IA-6 and AUS-IA-DUP were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)	Flag	A or P
	AUS-IA-6	AUS-IA-DUP				
Dichlorodifluoromethane	1.9	2.0	5 (≤50)	-	-	-
Chloromethane	0.17	0.26	-	0.09 (≤0.30)	-	-
Trichlorofluoromethane	1.0	1.0	0 (≤50)	-	-	-
Methylene chloride	0.40	0.37	-	0.03 (≤0.30)	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	0.43	0.44	-	0.01 (≤0.30)	-	-
Chloroform	0.30	0.27	-	0.03 (≤0.30)	-	-
Benzene	0.38	0.37	-	0.01 (≤0.30)	-	-
Carbon tetrachloride	0.48	0.46	-	0.02 (≤0.30)	-	-
Toluene	1.4	1.3	7 (≤50)	-	-	-
Tetrachloroethene	0.26	0.25	-	0.01 (≤0.30)	-	-
Ethylbenzene	0.17	0.17	-	0 (≤0.30)	-	-
m,p-Xylenes	0.46	0.45	-	0.01 (≤0.30)	-	-
o-Xylene	0.18	0.17	-	0.01 (≤0.30)	-	-

Jones Chemical
Volatiles - Data Qualification Summary - SDG P1103662

SDG	Sample	Compound	Flag	A or P	Reason
P1103662	AUS-IA-1 AUS-IA-2 AUS-IA-3 AUS-IA-4 AUS-IA-5** AUS-IA-6 AUG-IA-AMB-1 AUG-IA-AMB-2 AUS-IA-DUP	Chloromethane Chloroform	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)

Jones Chemical
Volatiles - Laboratory Blank Data Qualification Summary - SDG P1103662

No Sample Data Qualified in this SDG

Jones Chemical
Volatiles - Field Blank Data Qualification Summary - SDG P1103662

No Sample Data Qualified in this SDG

RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-1
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-001

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00812

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV		MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**		0.16	**0.40**		0.033	
74-87-3	Chloromethane	**0.22**	J	0.16	**0.11**		0.078	
75-01-4	Vinyl Chloride	ND		0.16	ND		0.063	
74-83-9	Bromomethane	ND		0.16	ND		0.041	
75-00-3	Chloroethane	ND		0.16	ND		0.061	
75-69-4	Trichlorofluoromethane	**1.0**		0.16	**0.18**		0.029	
75-35-4	1,1-Dichloroethene	ND		0.16	ND		0.041	
75-09-2	Methylene Chloride	**0.39**		0.16	**0.11**		0.046	
76-13-1	Trichlorotrifluoroethane	**0.46**		0.16	**0.060**		0.021	
156-60-5	trans-1,2-Dichloroethene	ND		0.16	ND		0.041	
75-34-3	1,1-Dichloroethane	ND		0.16	ND		0.040	
1634-04-4	Methyl tert-Butyl Ether	ND		0.16	ND		0.045	
156-59-2	cis-1,2-Dichloroethene	ND		0.16	ND		0.041	
67-66-3	Chloroform	**0.53**	J	0.16	**0.11**		0.033	
107-06-2	1,2-Dichloroethane	ND		0.16	ND		0.040	
71-55-6	1,1,1-Trichloroethane	ND		0.16	ND		0.030	
71-43-2	Benzene	**0.39**		0.16	**0.12**		0.050	
56-23-5	Carbon Tetrachloride	**0.41**		0.16	**0.065**		0.026	
78-87-5	1,2-Dichloropropane	ND		0.16	ND		0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-1
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-001

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00812

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.370 Final Pressure (psig): 3.500

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.16	ND	0.024	
79-01-6	Trichloroethene	**0.17**	0.16	**0.031**	0.030	
123-91-1	1,4-Dioxane	ND	0.16	ND	0.045	
10061-01-5	cis-1,3-Dichloropropene	ND	0.16	ND	0.035	
10061-02-6	trans-1,3-Dichloropropene	ND	0.16	ND	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
3-88-3	Toluene	**1.7**	0.16	**0.44**	0.043	
06-93-4	1,2-Dibromoethane	ND	0.016	ND	0.0021	
127-18-4	Tetrachloroethene	**0.68**	0.16	**0.10**	0.024	
108-90-7	Chlorobenzene	ND	0.16	ND	0.035	
100-41-4	Ethylbenzene	**0.23**	0.16	**0.052**	0.037	
179601-23-1	m,p-Xylenes	**0.59**	0.16	**0.14**	0.037	
95-47-6	o-Xylene	**0.23**	0.16	**0.053**	0.037	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.16	ND	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.16	ND	0.027	
106-46-7	1,4-Dichlorobenzene	ND	0.16	ND	0.027	
95-50-1	1,2-Dichlorobenzene	ND	0.16	ND	0.027	
120-82-1	1,2,4-Trichlorobenzene	ND	0.16	ND	0.022	
87-68-3	Hexachlorobutadiene	ND	0.16	ND	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-2
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-002

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01555

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.56 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV		MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**		0.16	**0.39**		0.033	
74-87-3	Chloromethane	**0.24**	J	0.16	**0.12**		0.079	
75-01-4	Vinyl Chloride	ND		0.16	ND		0.064	
74-83-9	Bromomethane	ND		0.16	ND		0.042	
75-00-3	Chloroethane	ND		0.16	ND		0.062	
75-69-4	Trichlorofluoromethane	**1.1**		0.16	**0.19**		0.029	
75-35-4	1,1-Dichloroethene	ND		0.16	ND		0.041	
75-09-2	Methylene Chloride	**0.38**		0.16	**0.11**		0.047	
76-13-1	Trichlorotrifluoroethane	**0.45**		0.16	**0.059**		0.021	
156-60-5	trans-1,2-Dichloroethene	ND		0.16	ND		0.041	
75-34-3	1,1-Dichloroethane	ND		0.16	ND		0.041	
1634-04-4	Methyl tert-Butyl Ether	ND		0.16	ND		0.046	
156-59-2	cis-1,2-Dichloroethene	ND		0.16	ND		0.041	
67-66-3	Chloroform	**0.62**	J	0.16	**0.13**		0.034	
107-06-2	1,2-Dichloroethane	ND		0.16	ND		0.041	
71-55-6	1,1,1-Trichloroethane	ND		0.16	ND		0.030	
71-43-2	Benzene	**0.45**		0.16	**0.14**		0.051	
56-23-5	Carbon Tetrachloride	**0.41**		0.16	**0.066**		0.026	
78-87-5	1,2-Dichloropropane	ND		0.16	ND		0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-2** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-002

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01555

Initial Pressure (psig): -3.560 Final Pressure (psig): 3.550

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.16	ND	0.024	
79-01-6	Trichloroethene	**0.22**	0.16	**0.041**	0.031	
123-91-1	1,4-Dioxane	ND	0.16	ND	0.046	
10061-01-5	cis-1,3-Dichloropropene	ND	0.16	ND	0.036	
10061-02-6	trans-1,3-Dichloropropene	ND	0.16	ND	0.036	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
108-88-3	Toluene	**2.2**	0.16	**0.59**	0.044	
106-93-4	1,2-Dibromoethane	ND	0.016	ND	0.0021	
127-18-4	Tetrachloroethene	**0.89**	0.16	**0.13**	0.024	
108-90-7	Chlorobenzene	ND	0.16	ND	0.036	
100-41-4	Ethylbenzene	**0.25**	0.16	**0.058**	0.038	
179601-23-1	m,p-Xylenes	**0.66**	0.16	**0.15**	0.038	
95-47-6	o-Xylene	**0.25**	0.16	**0.058**	0.038	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.16	ND	0.024	
541-73-1	1,3-Dichlorobenzene	ND	0.16	ND	0.027	
106-46-7	1,4-Dichlorobenzene	ND	0.16	ND	0.027	
95-50-1	1,2-Dichlorobenzene	ND	0.16	ND	0.027	
120-82-1	1,2,4-Trichlorobenzene	ND	0.16	ND	0.022	
87-68-3	Hexachlorobutadiene	ND	0.16	ND	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-3
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-003

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01373

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.63 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV		MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**		0.14	**0.39**		0.028	
74-87-3	Chloromethane	**0.25**	J	0.14	**0.12**		0.067	
75-01-4	Vinyl Chloride	ND		0.14	ND		0.054	
74-83-9	Bromomethane	ND		0.14	ND		0.036	
75-00-3	Chloroethane	ND		0.14	ND		0.053	
75-69-4	Trichlorofluoromethane	**1.0**		0.14	**0.18**		0.025	
75-35-4	1,1-Dichloroethene	ND		0.14	ND		0.035	
75-09-2	Methylene Chloride	**0.41**		0.14	**0.12**		0.040	
76-13-1	Trichlorotrifluoroethane	**0.45**		0.14	**0.059**		0.018	
156-60-5	trans-1,2-Dichloroethene	ND		0.14	ND		0.035	
75-34-3	1,1-Dichloroethane	ND		0.14	ND		0.034	
1634-04-4	Methyl tert-Butyl Ether	ND		0.14	ND		0.039	
156-59-2	cis-1,2-Dichloroethene	ND		0.14	ND		0.035	
67-66-3	Chloroform	**0.50**	J	0.14	**0.10**		0.028	
107-06-2	1,2-Dichloroethane	ND		0.14	ND		0.034	
71-55-6	1,1,1-Trichloroethane	ND		0.14	ND		0.025	
71-43-2	Benzene	**0.44**		0.14	**0.14**		0.044	
56-23-5	Carbon Tetrachloride	**0.41**		0.14	**0.065**		0.022	
78-87-5	1,2-Dichloropropane	ND		0.14	ND		0.030	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-3
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-003

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01373

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.630 Final Pressure (psig): 3.500

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.14	ND	0.021	
79-01-6	Trichloroethene	**0.15**	0.14	**0.027**	0.026	
123-91-1	1,4-Dioxane	ND	0.14	ND	0.039	
10061-01-5	cis-1,3-Dichloropropene	ND	0.14	ND	0.031	
10061-02-6	trans-1,3-Dichloropropene	ND	0.14	ND	0.031	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.025	
108-88-3	Toluene	**2.4**	0.14	**0.63**	0.037	
106-93-4	1,2-Dibromoethane	ND	0.014	ND	0.0018	
127-18-4	Tetrachloroethene	**0.92**	0.14	**0.14**	0.021	
108-90-7	Chlorobenzene	ND	0.14	ND	0.030	
100-41-4	Ethylbenzene	**0.27**	0.14	**0.063**	0.032	
179601-23-1	m,p-Xylenes	**0.69**	0.14	**0.16**	0.032	
95-47-6	o-Xylene	**0.27**	0.14	**0.061**	0.032	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.14	ND	0.020	
541-73-1	1,3-Dichlorobenzene	ND	0.14	ND	0.023	
106-46-7	1,4-Dichlorobenzene	ND	0.14	ND	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.14	ND	0.023	
120-82-1	1,2,4-Trichlorobenzene	ND	0.14	ND	0.019	
87-68-3	Hexachlorobutadiene	ND	0.14	ND	0.013	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-4** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-004

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01206

Initial Pressure (psig): -0.66 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.13	**0.40**	0.026	
74-87-3	Chloromethane	**0.27** J	0.13	**0.13**	0.063	
75-01-4	Vinyl Chloride	ND	0.13	ND	0.051	
74-83-9	Bromomethane	ND	0.13	ND	0.033	
75-00-3	Chloroethane	ND	0.13	ND	0.049	
75-69-4	Trichlorofluoromethane	**0.99**	0.13	**0.18**	0.023	
-35-4	1,1-Dichloroethene	ND	0.13	ND	0.033	
75-09-2	Methylene Chloride	**0.38**	0.13	**0.11**	0.037	
76-13-1	Trichlorotrifluoroethane	**0.46**	0.13	**0.059**	0.017	
156-60-5	trans-1,2-Dichloroethene	ND	0.13	ND	0.033	
75-34-3	1,1-Dichloroethane	ND	0.13	ND	0.032	
1634-04-4	Methyl tert-Butyl Ether	ND	0.13	ND	0.036	
156-59-2	cis-1,2-Dichloroethene	ND	0.13	ND	0.033	
67-66-3	Chloroform	ND UJ	0.13	ND	0.027	
107-06-2	1,2-Dichloroethane	ND	0.13	ND	0.032	
71-55-6	1,1,1-Trichloroethane	ND	0.13	ND	0.024	
71-43-2	Benzene	**0.35**	0.13	**0.11**	0.041	
56-23-5	Carbon Tetrachloride	**0.40**	0.13	**0.064**	0.021	
78-87-5	1,2-Dichloropropane	ND	0.13	ND	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: ARCADIS U.S., Inc.
Client Sample ID: AUS-IA-4
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-004

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01206

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.660 Final Pressure (psig): 3.500

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.13	ND	0.019	
79-01-6	Trichloroethene	ND	0.13	ND	0.024	
123-91-1	1,4-Dioxane	ND	0.13	ND	0.036	
10061-01-5	cis-1,3-Dichloropropene	ND	0.13	ND	0.029	
10061-02-6	trans-1,3-Dichloropropene	ND	0.13	ND	0.029	
79-00-5	1,1,2-Trichloroethane	ND	0.13	ND	0.024	
8-88-3	Toluene	**1.1**	0.13	**0.30**	0.035	
106-93-4	1,2-Dibromoethane	ND	0.013	ND	0.0017	
127-18-4	Tetrachloroethene	**0.36**	0.13	**0.052**	0.019	
108-90-7	Chlorobenzene	ND	0.13	ND	0.028	
100-41-4	Ethylbenzene	**0.16**	0.13	**0.037**	0.030	
179601-23-1	m,p-Xylenes	**0.40**	0.13	**0.092**	0.030	
95-47-6	o-Xylene	**0.15**	0.13	**0.035**	0.030	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.13	ND	0.019	
541-73-1	1,3-Dichlorobenzene	ND	0.13	ND	0.022	
106-46-7	1,4-Dichlorobenzene	ND	0.13	ND	0.022	
95-50-1	1,2-Dichlorobenzene	ND	0.13	ND	0.022	
120-82-1	1,2,4-Trichlorobenzene	ND	0.13	ND	0.018	
87-68-3	Hexachlorobutadiene	ND	0.13	ND	0.012	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-5** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-005

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00640
Initial Pressure (psig): -1.93 Final Pressure (psig): 3.83

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV		MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**		0.15	**0.40**		0.029	
74-87-3	Chloromethane	**0.25**	J	0.15	**0.12**		0.070	
75-01-4	Vinyl Chloride	ND		0.15	ND		0.057	
74-83-9	Bromomethane	ND		0.15	ND		0.037	
75-00-3	Chloroethane	ND		0.15	ND		0.055	
75-69-4	Trichlorofluoromethane	**1.1**		0.15	**0.20**		0.026	
-35-4	1,1-Dichloroethene	ND		0.15	ND		0.037	
75-09-2	Methylene Chloride	**0.40**		0.15	**0.11**		0.042	
76-13-1	Trichlorotrifluoroethane	**0.45**		0.15	**0.058**		0.019	
156-60-5	trans-1,2-Dichloroethene	ND		0.15	ND		0.037	
75-34-3	1,1-Dichloroethane	ND		0.15	ND		0.036	
1634-04-4	Methyl tert-Butyl Ether	ND		0.15	ND		0.040	
156-59-2	cis-1,2-Dichloroethene	ND		0.15	ND		0.037	
67-66-3	Chloroform	**0.40**	J	0.15	**0.082**		0.030	
107-06-2	1,2-Dichloroethane	ND		0.15	ND		0.036	
71-55-6	1,1,1-Trichloroethane	ND		0.15	ND		0.027	
71-43-2	Benzene	**0.40**		0.15	**0.13**		0.045	
56-23-5	Carbon Tetrachloride	**0.47**		0.15	**0.074**		0.023	
78-87-5	1,2-Dichloropropane	ND		0.15	ND		0.031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-5** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-005

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00640

Initial Pressure (psig): -1.930 Final Pressure (psig): 3.830

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.15	ND	0.022	
79-01-6	Trichloroethene	ND	0.15	ND	0.027	
123-91-1	1,4-Dioxane	ND	0.15	ND	0.040	
10061-01-5	cis-1,3-Dichloropropene	ND	0.15	ND	0.032	
10061-02-6	trans-1,3-Dichloropropene	ND	0.15	ND	0.032	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.027	
3-88-3	Toluene	**1.4**	0.15	**0.37**	0.038	
.06-93-4	1,2-Dibromoethane	ND	0.015	ND	0.0019	
127-18-4	Tetrachloroethene	**0.27**	0.15	**0.040**	0.021	
108-90-7	Chlorobenzene	ND	0.15	ND	0.031	
100-41-4	Ethylbenzene	**0.19**	0.15	**0.045**	0.033	
179601-23-1	m,p-Xylenes	**0.53**	0.15	**0.12**	0.033	
95-47-6	o-Xylene	**0.20**	0.15	**0.046**	0.033	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.15	ND	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.15	ND	0.024	
106-46-7	1,4-Dichlorobenzene	ND	0.15	ND	0.024	
95-50-1	1,2-Dichlorobenzene	ND	0.15	ND	0.024	
120-82-1	1,2,4-Trichlorobenzene	ND	0.15	ND	0.020	
87-68-3	Hexachlorobutadiene	ND	0.15	ND	0.014	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-6** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-006

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/7/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01601

Initial Pressure (psig): -2.78 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**		0.15	**0.39**	0.031	
74-87-3	Chloromethane	**0.17**	J	0.15	**0.084**	0.075	
75-01-4	Vinyl Chloride	ND		0.15	ND	0.060	
74-83-9	Bromomethane	ND		0.15	ND	0.040	
75-00-3	Chloroethane	ND		0.15	ND	0.058	
75-69-4	Trichlorofluoromethane	**1.0**		0.15	**0.18**	0.027	
75-35-4	1,1-Dichloroethene	ND		0.15	ND	0.039	
75-09-2	Methylene Chloride	**0.40**		0.15	**0.11**	0.044	
76-13-1	Trichlorotrifluoroethane	**0.43**		0.15	**0.056**	0.020	
156-60-5	trans-1,2-Dichloroethene	ND		0.15	ND	0.039	
75-34-3	1,1-Dichloroethane	ND		0.15	ND	0.038	
1634-04-4	Methyl tert-Butyl Ether	ND		0.15	ND	0.043	
156-59-2	cis-1,2-Dichloroethene	ND		0.15	ND	0.039	
67-66-3	Chloroform	**0.30**	J	0.15	**0.061**	0.032	
107-06-2	1,2-Dichloroethane	ND		0.15	ND	0.038	
71-55-6	1,1,1-Trichloroethane	ND		0.15	ND	0.028	
71-43-2	Benzene	**0.38**		0.15	**0.12**	0.048	
56-23-5	Carbon Tetrachloride	**0.48**		0.15	**0.076**	0.024	
78-87-5	1,2-Dichloropropane	ND		0.15	ND	0.033	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-6** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-006

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/7/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01601

Initial Pressure (psig): -2.780 Final Pressure (psig): 3.670

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.15	ND	0.023	
79-01-6	Trichloroethene	ND	0.15	ND	0.029	
123-91-1	1,4-Dioxane	ND	0.15	ND	0.043	
10061-01-5	cis-1,3-Dichloropropene	ND	0.15	ND	0.034	
10061-02-6	trans-1,3-Dichloropropene	ND	0.15	ND	0.034	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
8-88-3	Toluene	**1.4**	0.15	**0.37**	0.041	
106-93-4	1,2-Dibromoethane	ND	0.015	ND	0.0020	
127-18-4	Tetrachloroethene	**0.26**	0.15	**0.039**	0.023	
108-90-7	Chlorobenzene	ND	0.15	ND	0.033	
100-41-4	Ethylbenzene	**0.17**	0.15	**0.040**	0.035	
179601-23-1	m,p-Xylenes	**0.46**	0.15	**0.11**	0.035	
95-47-6	o-Xylene	**0.18**	0.15	**0.041**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.15	ND	0.022	
541-73-1	1,3-Dichlorobenzene	ND	0.15	ND	0.026	
106-46-7	1,4-Dichlorobenzene	ND	0.15	ND	0.026	
95-50-1	1,2-Dichlorobenzene	ND	0.15	ND	0.026	
120-82-1	1,2,4-Trichlorobenzene	ND	0.15	ND	0.021	
87-68-3	Hexachlorobutadiene	ND	0.15	ND	0.014	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 11/9/13

RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUG-IA-AMB-1** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-007

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00468

Initial Pressure (psig): -2.56 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**		0.15	**0.40**	0.030	
74-87-3	Chloromethane	**0.27**	J	0.15	**0.13**	0.073	
75-01-4	Vinyl Chloride	ND		0.15	ND	0.059	
74-83-9	Bromomethane	ND		0.15	ND	0.039	
75-00-3	Chloroethane	ND		0.15	ND	0.057	
75-69-4	Trichlorofluoromethane	**0.99**		0.15	**0.18**	0.027	
75-35-4	1,1-Dichloroethene	ND		0.15	ND	0.038	
75-09-2	Methylene Chloride	**0.36**		0.15	**0.10**	0.043	
76-13-1	Trichlorotrifluoroethane	**0.45**		0.15	**0.059**	0.020	
156-60-5	trans-1,2-Dichloroethene	ND		0.15	ND	0.038	
75-34-3	1,1-Dichloroethane	ND		0.15	ND	0.037	
1634-04-4	Methyl tert-Butyl Ether	ND		0.15	ND	0.042	
156-59-2	cis-1,2-Dichloroethene	ND		0.15	ND	0.038	
67-66-3	Chloroform	ND	UJ	0.15	ND	0.031	
107-06-2	1,2-Dichloroethane	ND		0.15	ND	0.037	
71-55-6	1,1,1-Trichloroethane	ND		0.15	ND	0.028	
71-43-2	Benzene	**0.39**		0.15	**0.12**	0.047	
56-23-5	Carbon Tetrachloride	**0.38**		0.15	**0.060**	0.024	
78-87-5	1,2-Dichloropropane	ND		0.15	ND	0.032	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

Client: ARCADIS U.S., Inc.
Client Sample ID: AUG-IA-AMB-1
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-007

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00468

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.560 Final Pressure (psig): 3.500

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.15	ND	0.022	
79-01-6	Trichloroethene	ND	0.15	ND	0.028	
123-91-1	1,4-Dioxane	ND	0.15	ND	0.042	
10061-01-5	cis-1,3-Dichloropropene	ND	0.15	ND	0.033	
10061-02-6	trans-1,3-Dichloropropene	ND	0.15	ND	0.033	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
108-88-3	Toluene	**1.2**	0.15	**0.31**	0.040	
106-93-4	1,2-Dibromoethane	ND	0.015	ND	0.0020	
127-18-4	Tetrachloroethene	ND	0.15	ND	0.022	
108-90-7	Chlorobenzene	ND	0.15	ND	0.033	
100-41-4	Ethylbenzene	**0.16**	0.15	**0.038**	0.035	
179601-23-1	m,p-Xylenes	**0.42**	0.15	**0.097**	0.035	
95-47-6	o-Xylene	**0.16**	0.15	**0.037**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.15	ND	0.022	
541-73-1	1,3-Dichlorobenzene	ND	0.15	ND	0.025	
106-46-7	1,4-Dichlorobenzene	ND	0.15	ND	0.025	
95-50-1	1,2-Dichlorobenzene	ND	0.15	ND	0.025	
120-82-1	1,2,4-Trichlorobenzene	ND	0.15	ND	0.020	
87-68-3	Hexachlorobutadiene	ND	0.15	ND	0.014	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

RESULTS OF ANALYSIS

Client: ARCADIS U.S., Inc.
Client Sample ID: AUG-IA-AMB-2
Client Project ID: Jones Chemical Torrance / CM010270

CAS Project ID: P1103662
CAS Sample ID: P1103662-008

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00603

Date Collected: 9/23/11
Date Received: 9/23/11
Date Analyzed: 10/6/11
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.15 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV		MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**		0.16	**0.41**		0.032	
74-87-3	Chloromethane	**0.26**	J	0.16	**0.13**		0.077	
75-01-4	Vinyl Chloride	ND		0.16	ND		0.062	
74-83-9	Bromomethane	ND		0.16	ND		0.041	
75-00-3	Chloroethane	ND		0.16	ND		0.060	
75-69-4	Trichlorofluoromethane	**1.0**		0.16	**0.18**		0.028	
75-35-4	1,1-Dichloroethene	ND		0.16	ND		0.040	
75-09-2	Methylene Chloride	**0.39**		0.16	**0.11**		0.045	
76-13-1	Trichlorotrifluoroethane	**0.45**		0.16	**0.059**		0.021	
156-60-5	trans-1,2-Dichloroethene	ND		0.16	ND		0.040	
75-34-3	1,1-Dichloroethane	ND		0.16	ND		0.039	
1634-04-4	Methyl tert-Butyl Ether	ND		0.16	ND		0.044	
156-59-2	cis-1,2-Dichloroethene	ND		0.16	ND		0.040	
67-66-3	Chloroform	**0.17**	J	0.16	**0.035**		0.032	
107-06-2	1,2-Dichloroethane	ND		0.16	ND		0.039	
71-55-6	1,1,1-Trichloroethane	ND		0.16	ND		0.029	
71-43-2	Benzene	**0.37**		0.16	**0.12**		0.049	
56-23-5	Carbon Tetrachloride	**0.42**		0.16	**0.067**		0.025	
78-87-5	1,2-Dichloropropane	ND		0.16	ND		0.034	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 11/19/13

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUG-IA-AMB-2** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-008

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00603

Initial Pressure (psig): -3.150 Final Pressure (psig): 3.500

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.16	ND	0.024	
79-01-6	Trichloroethene	ND	0.16	ND	0.029	
123-91-1	1,4-Dioxane	ND	0.16	ND	0.044	
10061-01-5	cis-1,3-Dichloropropene	ND	0.16	ND	0.035	
10061-02-6	trans-1,3-Dichloropropene	ND	0.16	ND	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.029	
108-88-3	Toluene	**1.1**	0.16	**0.28**	0.042	
106-93-4	1,2-Dibromoethane	ND	0.016	ND	0.0021	
127-18-4	Tetrachloroethene	ND	0.16	ND	0.023	
108-90-7	Chlorobenzene	ND	0.16	ND	0.034	
100-41-4	Ethylbenzene	**0.17**	0.16	**0.038**	0.036	
179601-23-1	m,p-Xylenes	**0.44**	0.16	**0.10**	0.036	
95-47-6	o-Xylene	**0.17**	0.16	**0.039**	0.036	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.16	ND	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.16	ND	0.026	
106-46-7	1,4-Dichlorobenzene	ND	0.16	ND	0.026	
95-50-1	1,2-Dichlorobenzene	ND	0.16	ND	0.026	
120-82-1	1,2,4-Trichlorobenzene	ND	0.16	ND	0.021	
87-68-3	Hexachlorobutadiene	ND	0.16	ND	0.015	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 11/19/13

RESULTS OF ANALYSIS

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-DUP** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-009

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00710

Initial Pressure (psig): -1.27 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.36

CAS #	Compound	Result µg/m³		MRL µg/m³	Result ppbV		MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**		0.14	**0.40**		0.028	
74-87-3	Chloromethane	**0.26**	J	0.14	**0.12**		0.066	
75-01-4	Vinyl Chloride	ND		0.14	ND		0.053	
74-83-9	Bromomethane	ND		0.14	ND		0.035	
75-00-3	Chloroethane	ND		0.14	ND		0.052	
75-69-4	Trichlorofluoromethane	**1.0**		0.14	**0.18**		0.024	
75-35-4	1,1-Dichloroethene	ND		0.14	ND		0.034	
75-09-2	Methylene Chloride	**0.37**		0.14	**0.11**		0.039	
76-13-1	Trichlorotrifluoroethane	**0.44**		0.14	**0.057**		0.018	
156-60-5	trans-1,2-Dichloroethene	ND		0.14	ND		0.034	
75-34-3	1,1-Dichloroethane	ND		0.14	ND		0.034	
1634-04-4	Methyl tert-Butyl Ether	ND		0.14	ND		0.038	
156-59-2	cis-1,2-Dichloroethene	ND		0.14	ND		0.034	
67-66-3	Chloroform	**0.27**	J	0.14	**0.055**		0.028	
107-06-2	1,2-Dichloroethane	ND		0.14	ND		0.034	
71-55-6	1,1,1-Trichloroethane	ND		0.14	ND		0.025	
71-43-2	Benzene	**0.37**		0.14	**0.12**		0.043	
56-23-5	Carbon Tetrachloride	**0.46**		0.14	**0.073**		0.022	
78-87-5	1,2-Dichloropropane	ND		0.14	ND		0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

Client: **ARCADIS U.S., Inc.**
Client Sample ID: **AUS-IA-DUP** CAS Project ID: P1103662
Client Project ID: **Jones Chemical Torrance / CM010270** CAS Sample ID: P1103662-009

Test Code: EPA TO-15 SIM Date Collected: 9/23/11
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 9/23/11
Analyst: Karen Ryan Date Analyzed: 10/6/11
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00710

Initial Pressure (psig): -1.270 Final Pressure (psig): 3.500

Canister Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-27-4	Bromodichloromethane	ND	0.14	ND	0.020	
79-01-6	Trichloroethene	ND	0.14	ND	0.025	
123-91-1	1,4-Dioxane	ND	0.14	ND	0.038	
10061-01-5	cis-1,3-Dichloropropene	ND	0.14	ND	0.030	
10061-02-6	trans-1,3-Dichloropropene	ND	0.14	ND	0.030	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.025	
8-88-3	Toluene	**1.3**	0.14	**0.36**	0.036	
106-93-4	1,2-Dibromoethane	ND	0.014	ND	0.0018	
127-18-4	Tetrachloroethene	**0.25**	0.14	**0.037**	0.020	
108-90-7	Chlorobenzene	ND	0.14	ND	0.030	
100-41-4	Ethylbenzene	**0.17**	0.14	**0.039**	0.031	
179601-23-1	m,p-Xylenes	**0.45**	0.14	**0.10**	0.031	
95-47-6	o-Xylene	**0.17**	0.14	**0.039**	0.031	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.14	ND	0.020	
541-73-1	1,3-Dichlorobenzene	ND	0.14	ND	0.023	
106-46-7	1,4-Dichlorobenzene	ND	0.14	ND	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.14	ND	0.023	
120-82-1	1,2,4-Trichlorobenzene	ND	0.14	ND	0.018	
87-68-3	Hexachlorobutadiene	ND	0.14	ND	0.013	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

MH 09/19/13

LDC #: 30264A48b **VALIDATION COMPLETENESS WORKSHEET** Date: 9/04/13
SDG #: P1103662 Level III/IV Page: 1 of 1
Laboratory: ALS Environmental Reviewer: JV6
2nd Reviewer: ✓

METHOD: GC/MS Volatiles (EPA Method TO-15-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/23/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	% RSD ≤ 30%
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 30%
V.	Blanks	A	
VI.	Surrogate spikes	~~N~~ A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for Level III validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 6, 9
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Air

1	AUS-IA-1	11	P11006-MB	21		31	
2	AUS-IA-2	12		22		32	
3	AUS-IA-3	13		23		33	
4	AUS-IA-4	14		24		34	
5	AUS-IA-5**	15		25		35	
6	AUS-IA-6 D	16		26		36	
7	AUG-IA-AMB-1	17		27		37	
8	AUG-IA-AMB-2	18		28		38	
9	AUS-IA-DUP D	19		29		39	
10		20		30		40	

LDC #: 30264 A486

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: [signature]

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Canister pressure criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓	✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.			✓	
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 30264 A48b

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within +/- 30.0 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroeth
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether

LDC #: 30264A48b

VALIDATION FINDINGS WORKSHEET
Initial Calibration

METHOD: GC/MS VOA (EPA Method TO-15)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were all percent relative standard deviations (%RSD) ≤ 30%?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples
	7/21/11	ICAL-MS07	A	32.97		All
			K	34.76		↓

INICAL.wpd

LDC#:30264A48b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG
2nd Reviewer:

METHOD: GC MS Volatiles (EPA Method TO-15SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/m3)		RPD (≤50%)	Difference (ug/m3)	Limits (ug/m3)	Qualifications (Parent Only)
	6	9				
JJ	1.9	2.0	5			
A	0.17	0.26		0.09	(≤0.30)	
KK	1.0	1.0	0			
E	0.40	0.37		0.03	(≤0.30)	
TTT	0.43	0.44		0.01	(≤0.30)	
K	0.30	0.27		0.03	(≤0.30)	
V	0.38	0.37		0.01	(≤0.30)	
O	0.48	0.46		0.02	(≤0.30)	
CC	1.4	1.3	7			
AA	0.26	0.25		0.01	(≤0.30)	
EE	0.17	0.17		0	(≤0.30)	
RRR	0.46	0.45		0.01	(≤0.30)	
SSS	0.18	0.17		0.01	(≤0.30)	

LDC #: 30264A48b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA Method TO-15SIM)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compour below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of as

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentra

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (500 std)	Recalculated RRF (500 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)
1	ICAL MS07	7/21/2011	Benzene (IS1)	6.040	6.040	6.466	6.466
			Trichloroethene (IS2)	0.321	0.321	0.351	0.351
			1,4-DCB (IS3)	1.399	1.399	1.486	1.486

LDC #: 30264A48b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS VOA (EPA Method TO-15SIM)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,

Cx = Conce
Ais = Area
Cis = Conc

#	Standard ID	Calibration Date	Compound	(IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Report % D
1	10061104 MS07	10/06/11	Benzene	(IS1)	6.466	5.087	5.087	21.3
			Trichloroethene	(IS2)	0.351	0.289	0.289	17.7
			1,4-DCB	(IS3)	1.486	1.198	1.198	19.4

LDC #: 30264 A48b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd reviewer: ✓

METHOD: GC/MS VOA (EPA Method TO-15)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 5 , Benzene

Conc. = $\frac{(12552)(1000)(1.45)}{(62968)(6.466)(1000)(\ )}$

= 0.400 ng/m³

ppbv = $\frac{(0.400)(24.45)}{(78)}$ = 0.126

≈ 0.13 ppbv ✓

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Revised Level II Data Validation Report

Project/Site Name: JCI Jones Chemicals CM010270.0012

Sample Delivery Group (SDG): P1103662

Parameters: Volatile Organic Compounds (VOCs)

Method: EPA TO-15

Laboratory: Columbia Analytical Services, Simi Valley, California

Samples:

Sample ID	Laboratory ID	Sample Description	Collection Date	Matrix
AUS-1A-1	P1103662-01	Field Sample	9/23/2011	Air
AUS-1A-2	P1103662-02	Field Sample	9/23/2011	Air
AUS-1A-3	P1103662-03	Field Sample	9/23/2011	Air
AUS-1A-4	P1103662-04	Field Sample	9/23/2011	Air
AUS-1A-5	P1103662-05	Field Sample	9/23/2011	Air
AUS-1A-6	P1103662-06	Field Sample	9/23/2011	Air
AUS-1A-AMB-1	P1103662-07	Field Sample	9/23/2011	Air
AUS-1A-AMB-2	P1103662-08	Field Sample	9/23/2011	Air
AUS-1A-DUP	P1103662-09	Field Sample	9/23/2011	Air

Introduction/Summary

This data review report covers the sample delivery group and associated samples listed on the cover sheet. The analyses were performed in accordance with USEPA Method TO-15. The quality assurance and quality control procedures (QA/QC) were evaluated in accordance with the Quality Assurance Project Plan (QAPP) for the Jones Chemical Site by LFR Inc. (April 2010), USEPA National Functional Guidelines of October 1999, and USEPA Region 9 Standard Operating Procedure 901 (Guidelines for Data Review) of March 2006.

This review is based on the method and project approved QA/QC procedures; the following subsections correlate to the above guidelines. The sections detail noted deviations if any. Tables summarizing all data qualification flags are provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols (P) or is of a technical advisory nature due to sample matrix (A).

Data qualifiers, if any, are summarized at the end of this report.

The data qualifiers that are used are those in the EPA Validation Functional Guidelines and are defined as follows:

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
UB	The analyte was detected in the associated blank, so its presence in the sample is suspect and the result has been changed to not detected.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
E	The analyte concentration exceeded the instrument calibration range and the calculated value is an estimated concentration of the analyte in the sample.
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

I. Sample Receipt, Holding Times, and Sample Preservation

Samples were received at the laboratory within the sample preservation criteria and were analyzed within 30 days of collection as required. The final canister pressures were acceptable at greater than 1 inch of mercury vacuum. Custody seals were not on the sample containers or the shipping containers.

II. Blanks

Method blank analysis was performed at the frequency of once for every analytical batch.

Target compounds were not detected in any of the laboratory method blanks.

III. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock. System performance and column resolution were acceptable.

IV. Initial Calibration

The relative standard deviation (RSD) was greater than the 30% control limit for chloromethane and chloroform. The chloromethane and chloroform results have been qualified as estimated. A minimum of five calibration levels was used in the initial calibration, in accordance with EPA Method TO-15 requirements. The RSD values/summaries may be found on pages 247 and 248 of the laboratory package presented in Appendix B of the Summer 2011 Report.

V. Continuing Calibration

All compounds associated with the continuing calibrations were within the 30% difference control limit. The method-specified control limit for continuing calibration is a maximum 30% deviation (%D) from the mean response factor. A letter response from the laboratory shown in Appendix B included a QC table for TO-15.

VI. Internal Standards

Internal standard compounds were added to all laboratory blanks, laboratory control samples (LCS), and field samples per project specifications.

As specified in Method TO-15, the area response for each internal standard (IS) in the blank must be within +/- 40% of the mean area response of the IS in the most recent valid calibration, and the retention time for each of IS must be within +/- 0.33 minute between the sample and the most recent valid calibration. A letter response from the laboratory shown in Appendix B includes the IS/RT summary sheet.

All IS retention times and area counts were within the method-specified control limits.

VII. System Monitoring (Surrogate) Compounds

Surrogate compounds were added to all laboratory blanks, LCS, and field samples per project specifications.

All surrogate recoveries were within project-specified control limits for precision and accuracy.

VIII. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD analysis is not specified for TO-15 analysis.

IX. Laboratory Control Sample (LCS)

At least one LCS per analytical batch was analyzed.

All percent recoveries were within project-specified control limits for accuracy.

X. Field Duplicate Samples

The QAPP does not specify a control limit for relative percent differences (RPDs) between the field duplicate air samples, nor do the National Functional Guidelines or Region 9 Validation Guidelines. The field duplicate results (in µg/m3) are presented in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result	Duplicate Result	RPD
AUS-IA-6 / AUS-IA-DUP	Freon 12	1.9	2.0	5.1%
	Chloromethane	0.17	0.26	41.9%
	Trichlorofluoromethane	1.0	1.0	0.0%
	Methylene chloride	0.40	0.37	7.8%
	Trichlorotrifluoroethane	0.43	0.44	2.3%
	Chloroform	0.30	0.27	10.5%
	Benzene	0.38	0.37	2.7%
	Carbon tetrachloride	0.48	0.46	4.3%
	Toluene	1.4	1.3	7.4%
	Tetrachloroethene	0.26	0.25	3.9%
	Ethylbenzene	0.17	0.17	0.0%
	m,p-Xylenes	0.46	0.45	2.2%
	o-Xylene	0.18	0.17	5.7%
	Ethanol	14	16	13.3%
	Acetone	11	15	30.8%
	2-Propanol	1.5 U	1.5	--
	4-Methyl-2-pentanone	0.77 U	0.80	--

U Not detected

The RPDs for chloromethane, acetone, 2-propanol, and 4-methyl-2-pentanone are acceptable because the concentrations are less than five times the reporting limits and the difference between the results are less than two times the reporting limits. All other RPDs are acceptable.

XI. Reporting Limits

The laboratory MDLs are found to be consistent with project needs.

XII. Target and Tentatively Identified Compound (TIC) Identification

Target compounds are identified on the GC/MS by using the compound's relative retention time and ion spectra. TICs are identified using a reverse library search of the compound's ion spectra.

All identified compounds met the specified criteria. TICs were not required for this SDG.

XIII. Overall Assessment of Data

All data were found to be acceptable per specifications as noted above under the introduction/summary with no exceptions.

Volatiles – Data Qualification Summary – SDG P1103662

Sample ID	Analyte	Result	Units	Qualifier	Reason	Class
AUS-IA-1	Chloromethane	0.22	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.53	$\mu g/m^3$	J	ICV % RSD > CL	P
AUS-IA-2	Chloromethane	0.24	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.62	$\mu g/m^3$	J	ICV % RSD > CL	P
AUS-IA-3	Chloromethane	0.25	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.50	$\mu g/m^3$	J	ICV % RSD > CL	P
AUS-IA-4	Chloromethane	0.27	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	ND	$\mu g/m^3$	UJ	ICV % RSD > CL	P
AUS-IA-5	Chloromethane	0.25	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.40	$\mu g/m^3$	J	ICV % RSD > CL	P
AUS-IA-6	Chloromethane	0.17	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.30	$\mu g/m^3$	J	ICV % RSD > CL	P
AUS-IA-AMB-1	Chloromethane	0.27	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	ND	$\mu g/m^3$	UJ	ICV % RSD > CL	P
AUS-IA-AMB-2	Chloromethane	0.26	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.17	$\mu g/m^3$	J	ICV % RSD > CL	P
AUS-IA-DUP	Chloromethane	0.26	$\mu g/m^3$	J	ICV % RSD > CL	P
	Chloroform	0.27	$\mu g/m^3$	J	ICV % RSD > CL	P

Volatiles - Blanks Data Qualification Summary – SDG P1103662

No data have been qualified due to blank detections.

ATTACHMENT B
TABLE A, SOIL-GAS SAMPLING FIELD PARAMETERS

Table A
Soil Gas Sampling Field Parameters
JCI Jones Chemicals, Torrance, CA
ARCADIS-CM010270.0015

Sample ID	Outdoor or Indoor	Date Sample Started	Date Sampled Ended	SUMMA Cannister Size (L)	Sample Start Time	Sample Stop Time	Total Sample Time	Initial Cannister Vacuum (inches of Hg)	Final Cannister Vacuum (inches of Hg)	Vacuum Measurement Upon Receipt by Lab (inches of Hg)	Cannister ID	Flow Controller ID	Temperature (°F) Start/Stop	Relative Humidity (%)	Air Speed (mph) Start/Stop	Barometric Pressure (in Hg) Start/Stop	Sample Intake Height (ft)
AUG-IA-AMB-1	Outdoor	9/22/2011	9/23/2011	6	14:29	14:15	23:36	-29	-6	-5.21	AC00468	FCA00280	71/73	69/67	10W/6WSW	29.77/29.82	6
AUG-IA-AMB-2	Outdoor	9/22/2011	9/23/2011	6	14:48	14:28	23:40	-29.5	-6.5	-6.41	AC00603	FCA00009	71/72	69/66	10W/6WSW	29.77/29.81	6
AUS-IA-1	Indoor	9/22/2011	9/23/2011	6	14:13	13:50	23:37	-29	-7	-6.86	AC00812	FCA00291	71/73	69/67	10W/6WSW	29.77/29.82	4
AUS-IA-2	Indoor	9/22/2011	9/23/2011	6	14:14	13:55	23:41	-29.5	-6.5	-7.25	AC001555	FCA00042	71/73	69/67	10W/6WSW	29.77/29.82	3
AUS-IA-3	Indoor	9/22/2011	9/23/2011	6	14:19	11:10	20:51	-30	-3	-3.32	AC01373	FCA00284	71/73	69/67	10W/6WSW	29.77/29.82	3
AUS-IA-4	Indoor	9/22/2011	9/23/2011	6	14:39	11:16	20:37	-30	-2	-1.34	AC01206	FCA00304	71/73	69/67	10W/6WSW	29.77/29.82	3
AUS-IA-5	Indoor	9/22/2011	9/23/2011	6	14:50	14:32	23:42	-30	-7.5	-3.93	AC000640	FCA00239	71/73	69/67	10W/6WSW	29.77/29.82	3
AUS-IA-6	Indoor	9/22/2011	9/23/2011	6	14:54	14:35	23:41	-30	-6.5	-5.66	AC01601	FCA00296	71/73	69/67	10W/6WSW	29.77/29.82	4
AUS-IA-6 (as AUS-IA-DUP)	Indoor	9/22/2011	9/23/2011	6	14:54	14:35	23:41	-30	-6	-2.59	AC00710	FCA0355	71/73	69/67	10W/6WSW	29.77/29.82	4

Notes:
L = Liters
Hg = Mercury
°F = Degrees Farenheit
mph = Miles per hour
ft = Feet

ATTACHMENT C
FIELD NOTES AND SITE PHOTOGRAPHS

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-1
Client:	JCI Jones Chemical	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~4'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM01027 0.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	9/22/11 14:13 / 9-23-11 13:50
Sample Point Location:	Main Office	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:13	29	71	69	10 W	29.77	—
9.23.11	13:50	7	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00812
Flow Controller ID:	FEA 00291
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-2
Client:	JCI	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	9.22.11 14:14 9.23 13:55
Sample Point Location:	Conference Room	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:14	29.5	71	69	10 W	29.77	—
9.23.11	13:55	6.5	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	ACO 1555
Flow Controller ID:	FCA 00042
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-3
Client:	Jones	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	None
Project #:	CM010270.0015	Miscellaneous Equipment:	N/A
Samplers:	JAG	Time On/Off:	9.22.11 14:19 9.23.11 11:10
Sample Point Location:	Office	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:19	30	71	69	10W	29.77	—
9.23.11	11:10	3	73	67	6WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling.

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC01373
Flow Controller ID:	FCA00284
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS 1A-4
Client:	Jones	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	~~None~~ N/A
Project #:	CM0108 70.0015	Miscellaneous Equipment:	none
Samplers:	JAG	Time On/Off:	9221 1439 9.23.11 11:16
Sample Point Location:	warehouse office	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:39	30	71	69	10 W	29.77	—
9.23.11	11.16	2	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	ACO 1206
Flow Controller ID:	FCA 00304
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-S
Client:	JCI	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	None
Project #:	CM010270.0015	Miscellaneous Equipment:	N/A
Samplers:	JAG	Time On/Off:	9.22.11 14:50
Sample Point Location:	Break Room	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:50	30+	71	69	10 W	29.77	—
9.23.11	14:32	-7.5	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00640
Flow Controller ID:	FCA00239
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-6
Client:	JCI Jones	Outdoor/Indoor:	Indoor
Project:	Jones Torrance	Sample Intake Height:	~4'
Location:	Torrance, CA	Tubing Information:	~~AAL~~ N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	☒ None
Samplers:	JAG	Time On/Off:	14:54 /
Sample Point Location:	Meet room in break	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:54	30+	71	Cell	10 W	29.77	—
9.23.11	14:35	-6.5	73	Cell	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	ACO 1601
Flow Controller ID:	FCA 00296
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-AMB-1
Client:	JCI	Outdoor/Indoor:	Outdoor
Project:	Torrance	Sample Intake Height:	≈ 6'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	Metal Stand
Samplers:	JAG	Time On/Off:	14:29
Sample Point Location:	Main Office canopy	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:29	29	71	69	10 W	29.77	—
9.23.11	14:15	6	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00468
Flow Controller ID:	FCA 00280
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-DUP (6)
Client:	Jones	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~4'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	14:54
Sample Point Location:	AUS-1A-6	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:54	30	71	69	10 W	29.77	—
9.23.11	14:35	— 6	73	67	6 WSW	29.82	-

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1L (6L)
Canister ID:	AC00710
Flow Controller ID:	FCA0355
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-AMB-2
Client:	Jones	Outdoor/Indoor:	Outdoor
Project:	Torrance	Sample Intake Height:	~6'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CMO10270.0015	Miscellaneous Equipment:	Metal Stand
Samplers:	JAG	Time On/Off:	14:48
Sample Point Location:	Outside break room	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9-22-11	14:48	-29.5	71	69	10 W	29.77	—
9-23-11	14:28	-6.5	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00603
Flow Controller ID:	FCA00009
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-1
Client:	JCI Jones Chemical	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~4'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	9/22/11 14:13 / 9-23-11 13:50
Sample Point Location:	Main Office	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:13	29	71	69	10 W	29.77	—
9.23.11	13:50	7	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00812
Flow Controller ID:	FEA 00291
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-2
Client:	JCI	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	9.22.11 14:14 9.23 13:55
Sample Point Location:	Conference Room	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:14	29.5	71	69	10 W	29.77	—
9.23.11	13:55	6.5	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	ACO 1555
Flow Controller ID:	FCA 00042
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-3
Client:	Jones	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	None
Project #:	CM010270.0015	Miscellaneous Equipment:	N/A
Samplers:	JAG	Time On/Off:	9.22.11 14:19 9.23.11 11:10
Sample Point Location:	Office	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:19	30	71	69	10W	29.77	—
9.23.11	11:10	3	73	67	6WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC01373
Flow Controller ID:	FCA00284
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS 1A-4
Client:	Jones	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	~~None~~ N/A
Project #:	CM0108 70.0015	Miscellaneous Equipment:	none
Samplers:	JAG	Time On/Off:	9.22.11 14:39 9.23.11 11:16
Sample Point Location:	Warehouse office	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:39	30	71	69	10 W	29.77	—
9.23.11	11:16	2	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	ACO 1206
Flow Controller ID:	FCA 00304
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-IA-5
Client:	JCI	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~3'
Location:	Torrance, CA	Tubing Information:	None
Project #:	CM010270.0015	Miscellaneous Equipment:	N/A
Samplers:	JAG	Time On/Off:	9.22.11 14:50
Sample Point Location:	Break Room	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:50	30+	71	69	10 W	29.77	—
9.23.11	14:32	7.5	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00640
Flow Controller ID:	FCA00239
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-6
Client:	JCI Jones	Outdoor/Indoor:	Indoor
Project:	Jones Torrance	Sample Intake Height:	~4'
Location:	Torrance, CA	Tubing Information:	~~None~~ N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	14:54 /
Sample Point Location:	Meet room in break	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:54	30+	71	Ce9	10 W	29.77	—
9.23.11	14:35	~6.5	73	67	6 NSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	ACO 1601
Flow Controller ID:	FCA00296
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-AMB-1
Client:	JCI	Outdoor/Indoor:	Outdoor
Project:	Torrance	Sample Intake Height:	~6'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	Metal Stand
Samplers:	JAG	Time On/Off:	14:29
Sample Point Location:	Main Office canopy	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:29	29	71	69	10 W	29.77	—
9.28.11	14:15	6	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6 L)
Canister ID:	AC00468
Flow Controller ID:	FCA 00280
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-DUP(6)
Client:	Jones	Outdoor/Indoor:	Indoor
Project:	Torrance	Sample Intake Height:	~4'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CM010270.0015	Miscellaneous Equipment:	None
Samplers:	JAG	Time On/Off:	14:54
Sample Point Location:	AUS-1A-6	Subcontractor:	Columbia

Instrument Readings:

Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:54	30	71	69	10 W	29.77	—
9.23.11	14:35	6	73	67	6 WSW	29.82	-

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

Size (circle one):	1 L (6L)
Canister ID:	AC00710
Flow Controller ID:	FCA0355
Notes:	

General Observations/Notes:

ARCADIS

Indoor Air/Ambient Air Sample Collection Log

		Sample ID:	AUS-1A-AMB-2
Client:	Jones	Outdoor/Indoor:	outdoor
Project:	Torrance	Sample Intake Height:	~6'
Location:	Torrance, CA	Tubing Information:	N/A
Project #:	CMO10270.0015	Miscellaneous Equipment:	Metal Stand
Samplers:	JAG	Time On/Off:	14:48
Sample Point Location:	Outside break room	Subcontractor:	Columbia

Instrument Readings:

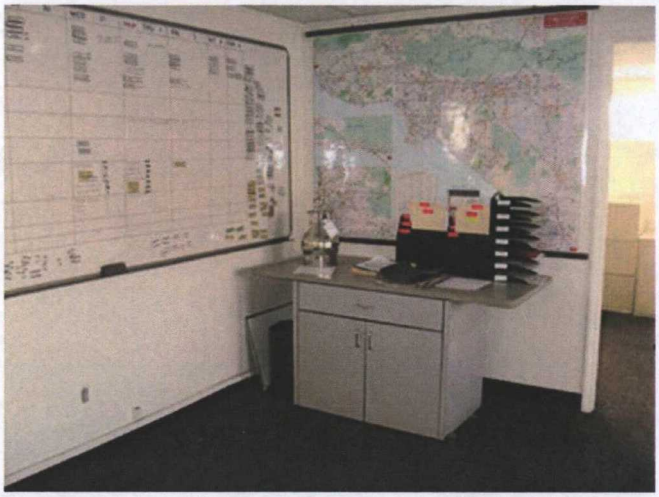
Date	Time	Canister Vacuum (a) (inches of Hg)	Temperature (°F)	Relative Humidity (%)	Air Speed (mph)	Barometric Pressure (inches of Hg)	PID (ppb)
9.22.11	14:48	~29.5	71	60%	10 W	29.77	—
9.23.11	14:24	65	73	67	6 WSW	29.82	—

(a) Record canister information at a minimum at the beginning and end of sampling

SUMMA Canister Information:

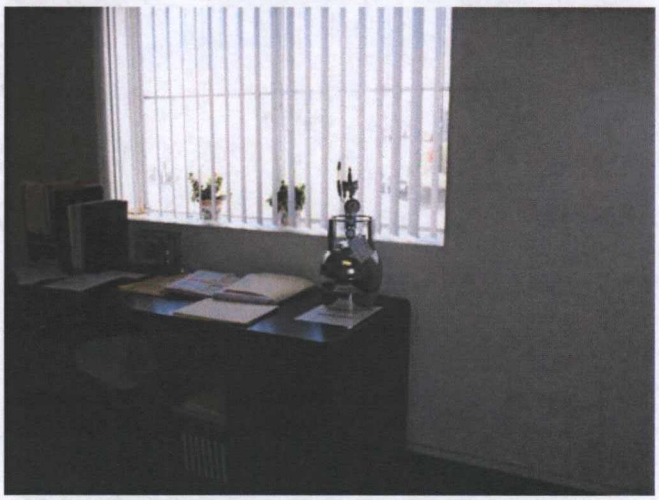
Size (circle one):	1 L (6 L)
Canister ID:	AC00603
Flow Controller ID:	FCA00009
Notes:	

General Observations/Notes:



Photograph 1. Sample Location AUS-1A-1. Open area in the main office, September 22, 2011.

Photograph 2. Sample Location AUS-1A-2. Conference room in the main office, September 22, 2011.



Photograph 3. Sample Location AUS-1A-3. Enclosed office, September 22, 2011.

Photograph 4. Sample Location AUS-1A-4. Warehouse office, September 22, 2011.

Photograph 5. Sample Location AUS-1A-AMB-1. Ambient sample outside main office, September 22,

Photograph 6. Sample Location AUS-1A-AMB-2. Ambient sample outside breakroom, September 22, 2011.

SoundEarth Strategies

Project No.:	S114-001
Sampling Event:	September 22, 2011
Conducted By:	Arcadis
Chk By:	M. Schuetz
File ID:	S114-001_2011_Summer_IA_Photolog_F.docx

INDOOR AIR SAMPLE LOCATION PHOTOS
JCI Jones Chemicals, Inc.
1401 West Del Amo Boulevard
Torrance, California

Photograph 7. Sample Location AUS-1A-5. Breakroom, September 22, 2011.

Photograph 8. Sample Location AUS-1A-6 and duplicate sample. Meeting room, September 22, 2011.

SoundEarth Strategies	Project No.:	S114-001	**INDOOR AIR SAMPLE LOCATION PHOTOS**
	Date:	September 22, 2011	JCI Jones Chemicals, Inc.
	Conducted By:	Arcadis	1401 West Del Amo Boulevard
	Chk By:	M. Schuetz	Torrance, California
	File ID:	S114-001_2011_Summer_IA_Photolog_F.docx	

ATTACHMENT D
LABORATORY ANALYTICAL REPORT

Columbia Analytical Services #P1103662

UNSCANNABLE MEDIA

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